

Anhang

zur Dissertation

Zum Einfluss von Dübelleisten auf das Querkrafttragverhalten des Stahlbetongurts von Verbundträgern im Bereich von großen Stegöffnungen

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H.14.B2_N_D1	1183
H.15.B2_P_D0	1185
H.16.B2_P_D2	1187
H.17.B2_N_D2	1189
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A. Pläne der Bauteilversuche

Tab. A.1.: Plannummern der Pläne für die Bauteilversuche im Bereich 1

Versuch	Herstellung Stahlträger	Anordnung der Kopfbolzendübel	Bewehrung	Versuchskörper	Versuchsaufbau	Aufbringung Normalkraft	Messtechnik - Dehnungsmessstreifen	Messtechnik - Wegaufnehmer	Messtechnik - Setzdehnungsmesser
B1_P_D1	121	122	123	124	125	127	128	129	130
B1_0_D1	121	122	123	124	125		128	129	130
B1_N_D1	121	122	33	134	135	137	138	129	130
B1_P_D0	121	122	143	144	125	127	148	129	130
B1_P_D2	121	122	153	154	145	127	158	129	130
B1_N_D2	121	122	63	164	135	137	168	129	130
B1_P_D2_kA	121	122	173	174	145	127	158	129	130
B1_N_D2_kA	121	122	83	184	135	137	168	129	130
B1_P_D1_MV	121	122	123	124	125	127	128	129	130
B1_P_D1_gO	121	122	193	194	195	127	198	199	190
B1_P_D1_St	131	122	123	155	145	127	188	129	130
B1_P_D1_Qb	121	122	172	124	175	127	178	129	130

Tab. A.2.: Plannummern der Pläne für die Bauteilversuche im Bereich 2

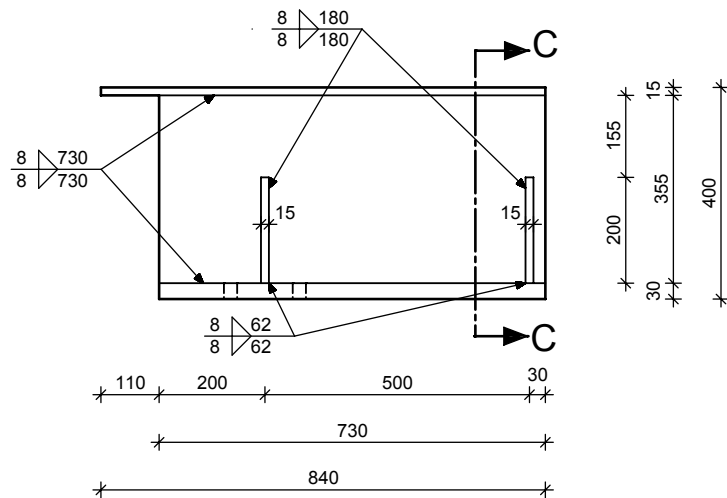
Versuch	Herstellung Stahlträger	Anordnung der Kopfbolzendübel	Bewehrung	Versuchskörper	Versuchsaufbau 1	Versuchsaufbau 2	Aufbringung Normalkraft	Messtechnik - Dehnungsmessstreifen	Messtechnik - Wegaufnehmer	Messtechnik - Setzdehnungsmesser
B2_P_D1	21	22	23	24	25	26	27	28	29	30
B2_O_D1	21	22	23	24	25	26		28	29	30
B2_N_D1	21	22	33	34	35	36	37	38	29	30
B2_P_D0	21	22	43	44	25	26	27	48	29	30
B2_P_D2	21	22	53	54	25	26	27	58	29	30
B2_N_D2	21	22	63	64	35	36	37	68	29	30
B2_P_D2_kA	21	22	73	74	25	26	27	58	29	30
B2_N_D2_kA	21	22	83	84	35	36	37	68	29	30
B2_P_D1_MV	21	22	23	24	25	26	27	28	29	30
B2_P_D1_gO	21	22	93	94	95	96	27	98	99	90
B2_P_D1_St	31	22	23	55	25	26	27	28	29	30
B2_P_D1_Qb	21	22	72	24	75		27	78	29	30

Tab. A.3.: Plannummern der Pläne für die Bauteilversuche im Bereich 3

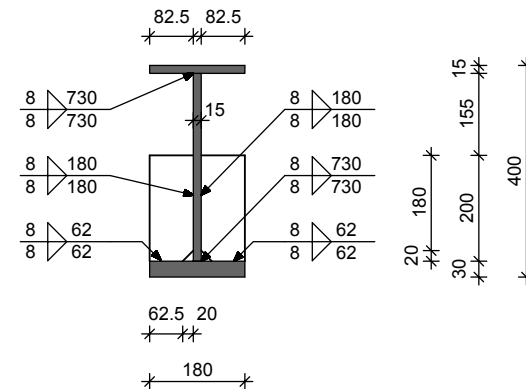
Versuch	Anordnung der Kopfbolzendübel	Bewehrung	Versuchskörper	Versuchsaufbau	Aufbringung Normalkraft	Messtechnik - Dehnungsmessstreifen 1	Messtechnik - Dehnungsmessstreifen 2	Messtechnik - Wegaufnehmer	Messtechnik - Setzdehnungsmesser
B3_P_D1	222	223	224	225	226	227	228	229	230
B3_O_D1	222	223	224	225		227	228	229	230
B3_N_D1	242	233	234	235	236	237	238	229	230
B3_P_D0	222	243	244	225	226	227	248	229	230

Herstellung Stahlträger

Ansicht M 1:10

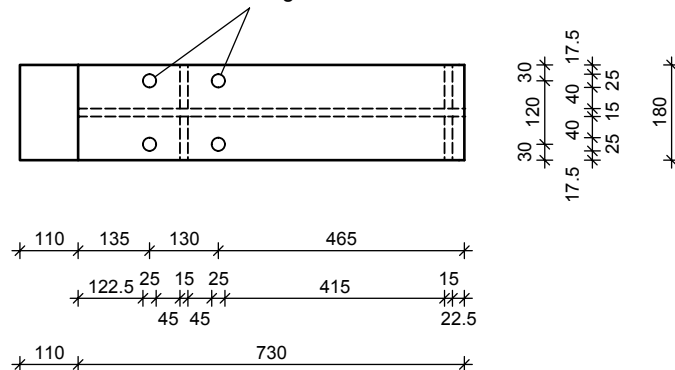


Schnitt M 1:10




Untersicht M 1:10

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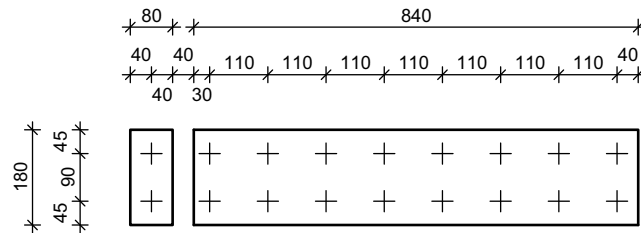


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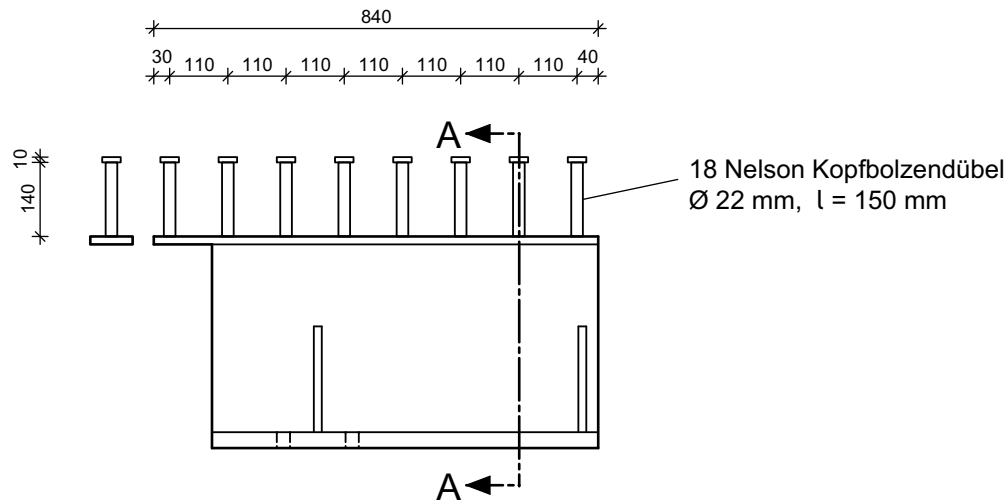
BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern
DFG - Verbundträger mit Dübelleisten			B2_P_D1 B2_P_D2_kA B2_0_D1 B2_N_D2_kA B2_N_D1 B2_P_D1_MV B2_P_D0 B2_P_D1_gO B2_P_D2 B2_P_D1_Qb B2_N_D2		
PLANINHALT					
B2 Herstellung Stahlträger					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@trhk.uni-kl.de www.massivbau-kl.de	
1:10	SCHN 771/4-1	21	22.06.2011		

Anordnung der Kopfbolzendübel

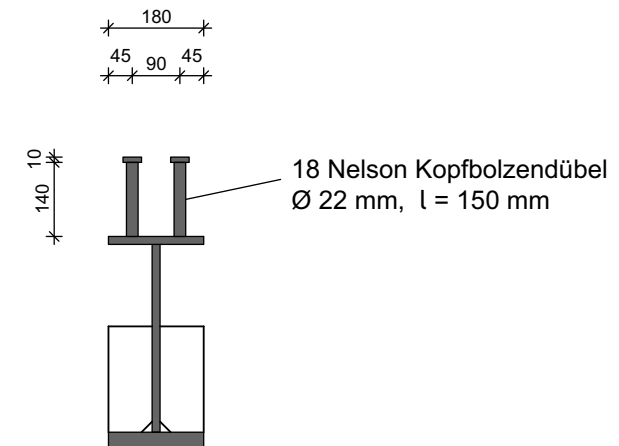
Draufsicht M 1:10




Ansicht M 1:10

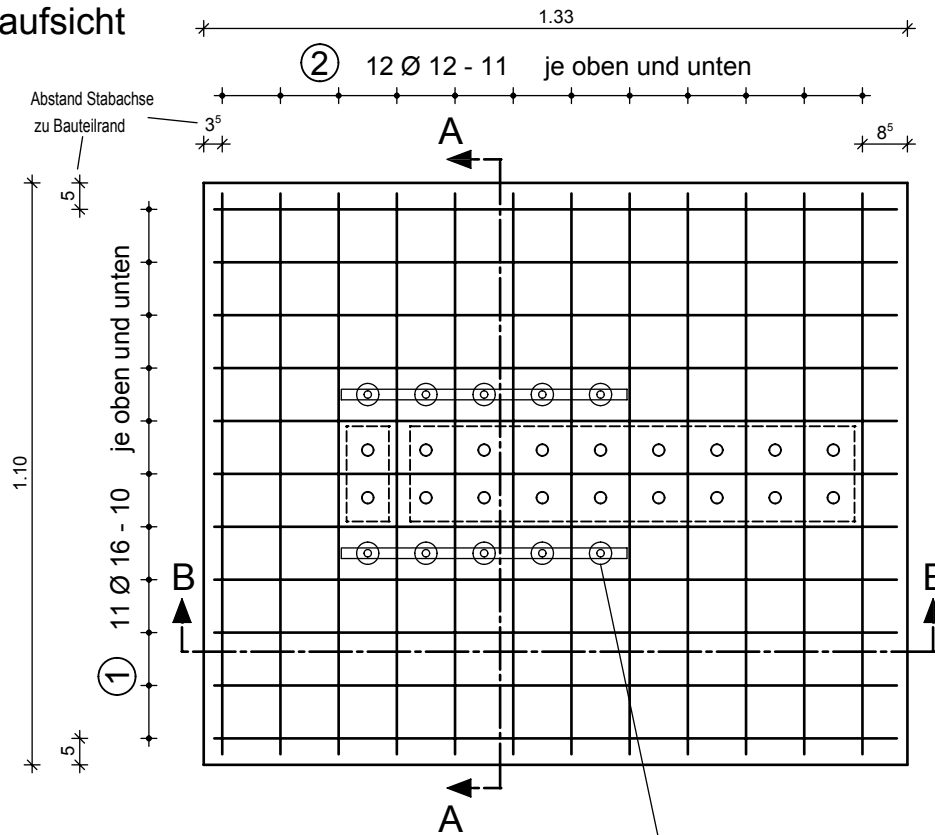


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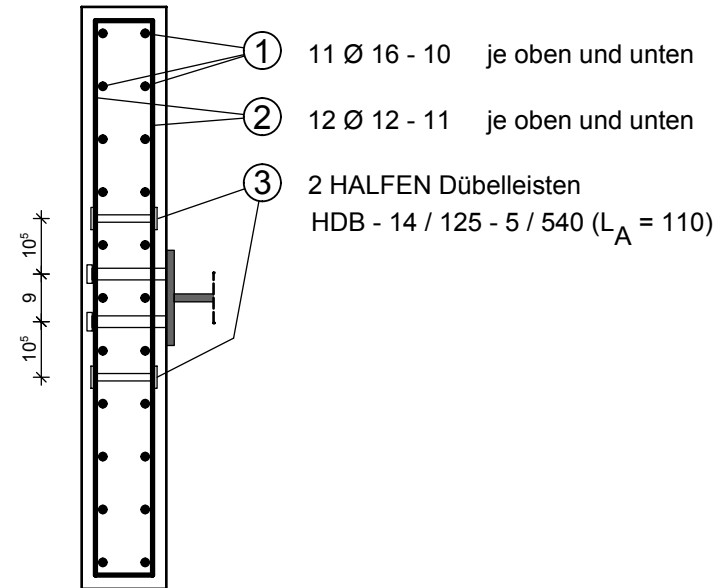


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DFG - Verbundträger mit Dübelleisten			B2_P_D1 B2_P_D2_ka B2_O_D1 B2_N_D2_ka B2_N_D1 B2_P_D1_MV B2_P_D0 B2_P_D1_gO B2_P_D2 B2_P_D1_St B2_N_D2 B2_P_D1_Qb		
PLANINHALT					
B2 Anordnung der Kopfbolzendübel					
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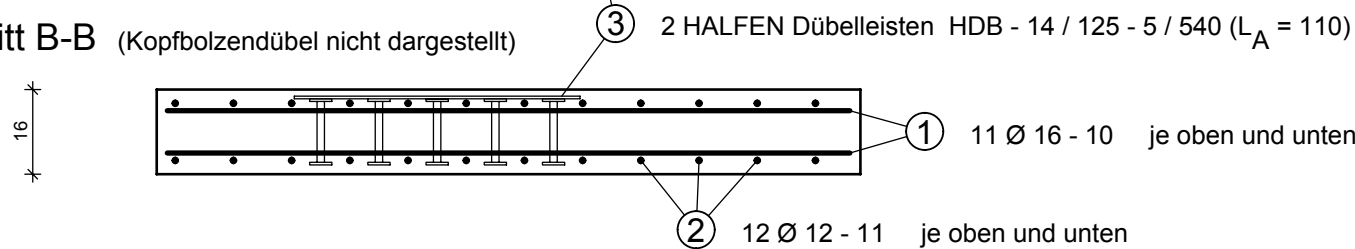
Draufsicht



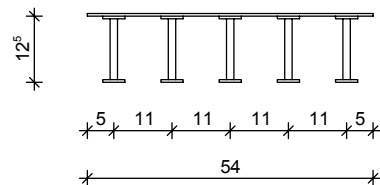
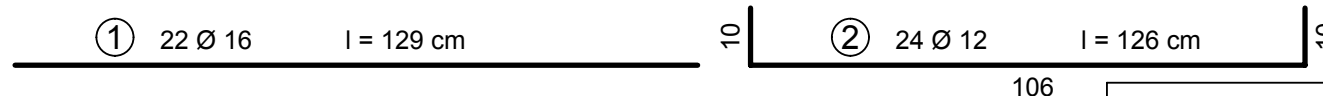
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)



Stahlauszüge



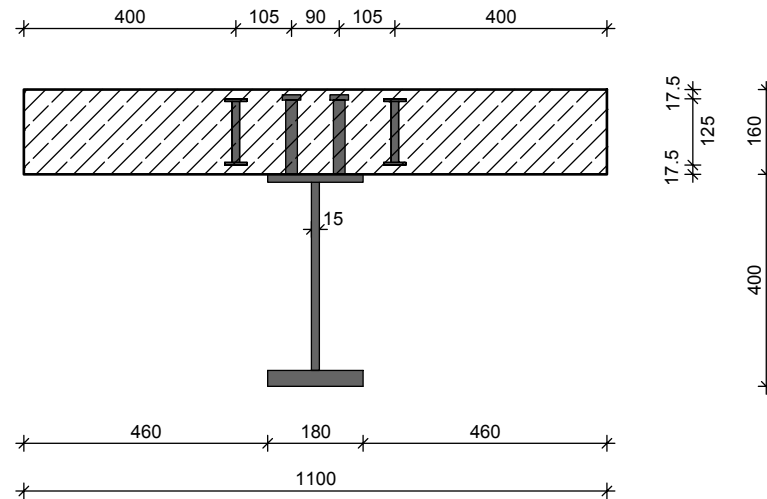
- ③ 2 HALFEN Dübelleisten HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14$ mm
Ankerhöhe $h = 125$ mm
Ankerabstand $L_A = 110$ mm

Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

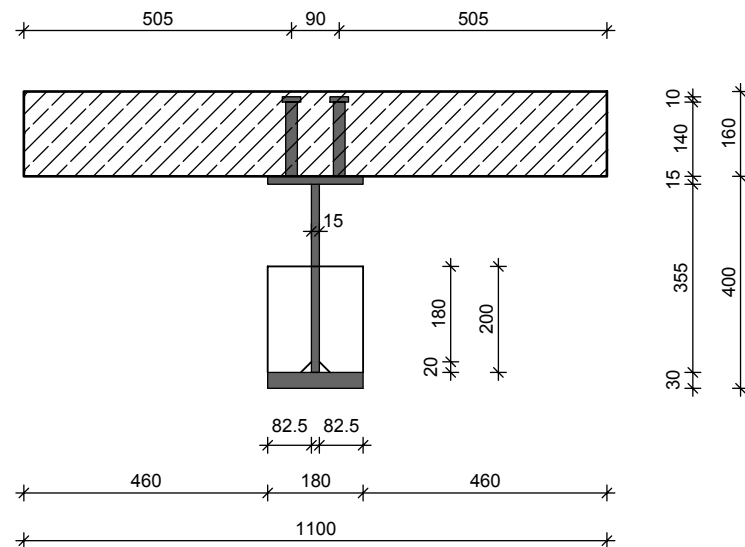
alle Maße in cm

BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelleisten		B2_P_D1 B2_O_D1 B2_P_D1_MV B2_P_D1_St	
PLANINHALT			
B2 Bewehrung			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:10	SCHN 771/4-1	23	22.06.2011

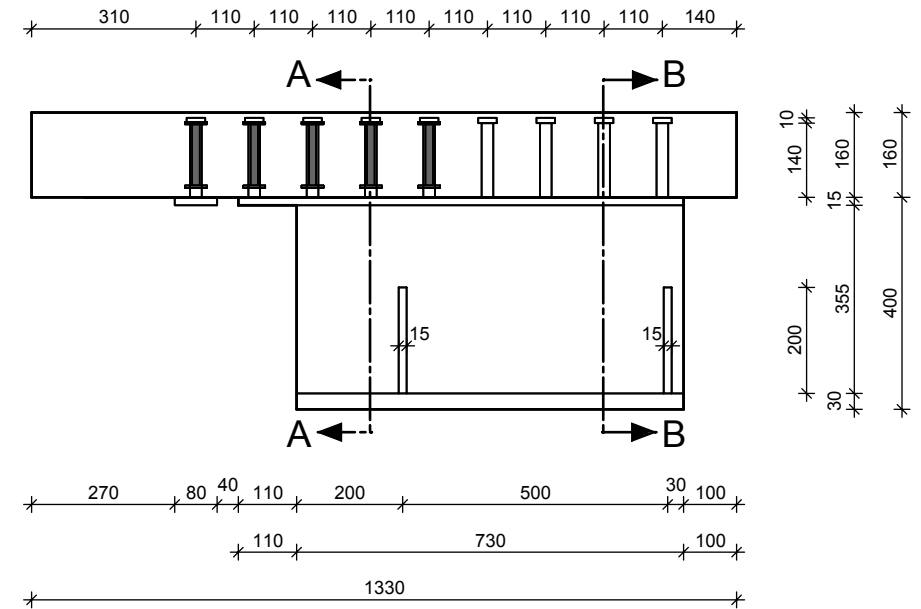
Schnitt A-A



Schnitt B-B



Ansicht



BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B2 Versuchskörper

MASSTAB
1:10

PROJEKT-NR.
SCHN 771/4-1

PLAN-NR.
24

DATUM
06.07.2011

VERSUCHE

B2_P_D1
B2_O_D1
B2_P_D1_MV
B2_P_D1_Qb

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c.balzer@trk.uni-kl.de
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Schnitt A-A

90

15

180

1100

Schnitt B-B

90

M 24
10.9

55

P

30 15 30
52.5 52.5

180

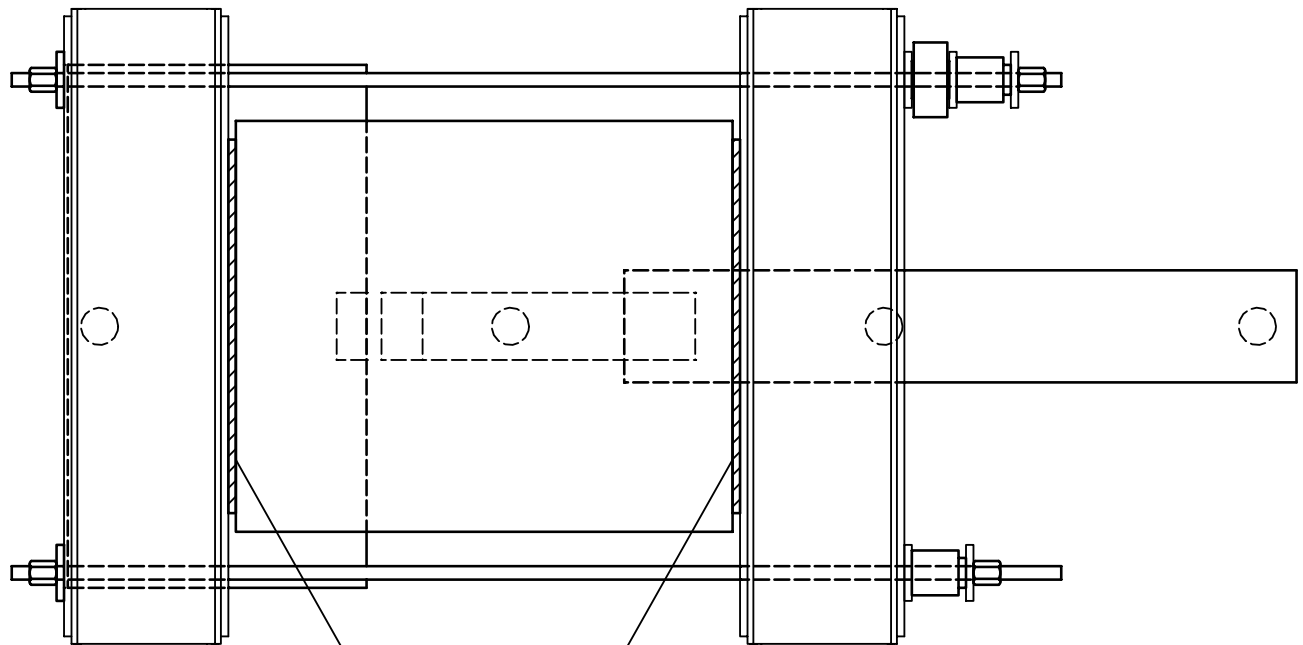
Technical drawing of a roof truss cross-section. The truss has a total width of 1100 and a height of 15. The top chord is divided into three segments: 460, 180, and 460. The bottom chord is a straight line of length 1100. The truss is supported by two vertical posts, each 9.6 high.

Technical drawing of a mechanical test setup for a composite beam. The drawing shows a side view of a beam with a central cutout, supported by an elastomer and a KMD 1000 support. Dimensions are given in mm. Labels include: Elastomerlager d = 10 mm, Stahlplatte, Halbschale, Stahlplatte, KMD 1000, Teflonschicht, and Teflon. A force P is applied downwards at the center of the cutout. Section lines A-A and B-B are indicated.

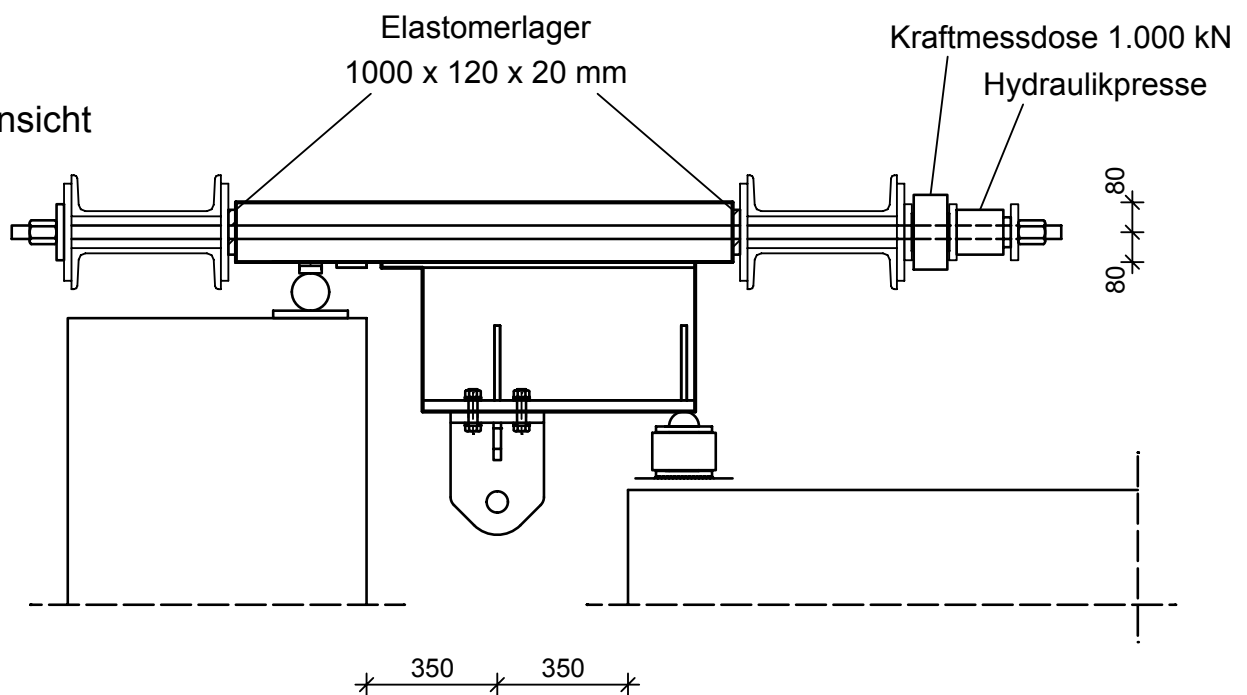
BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelleisten		B2_P_D1 B2_P_D2_kA B2_0_D1 B2_P_D1_MV B2_P_D0 B2_P_D1_St B2_P_D2	
PLANINHALT			
B2 Versuchsaufbau			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:10	SCHN 771/4-1	25	06.07.2011

Aufbringung der Druckkraft

Draufsicht



Ansicht



BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B2 Aufbringung Normalkraft

VERSUCHE

B2_P_D1 B2_P_D2_ka
B2_P_D0 B2_P_D1_MV
B2_P_D2 B2_P_D1_gO
B2_P_D1_St
B2_P_D1_Qb

**TECHNISCHE UNIVERSITÄT
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MASSTAB

1:20

PROJEKT-NR.

SCHN 771/4-1

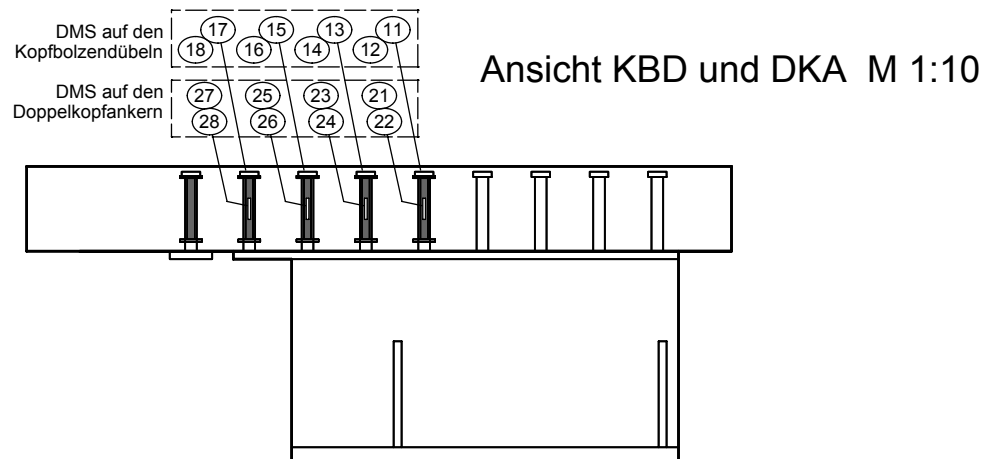
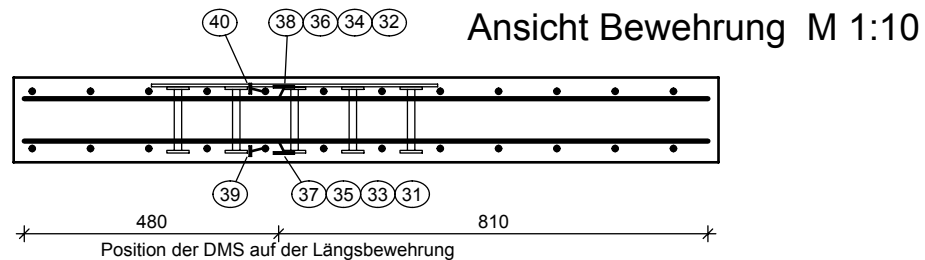
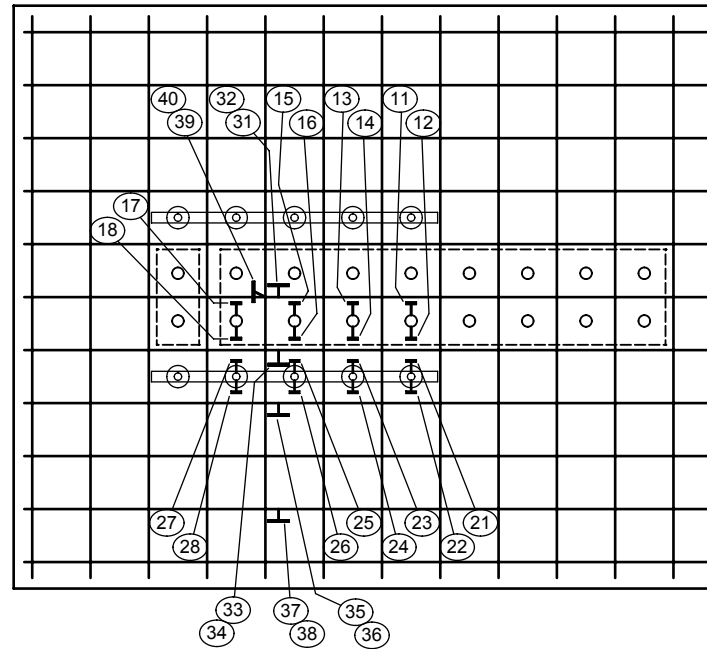
PLAN-NR.

27

DATUM

06.07.2011

Draufsicht M 1:10

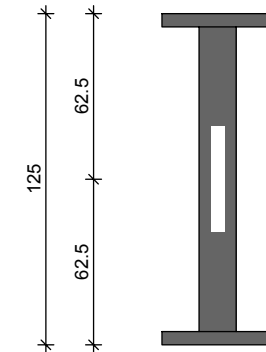
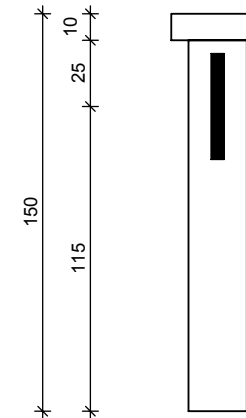


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

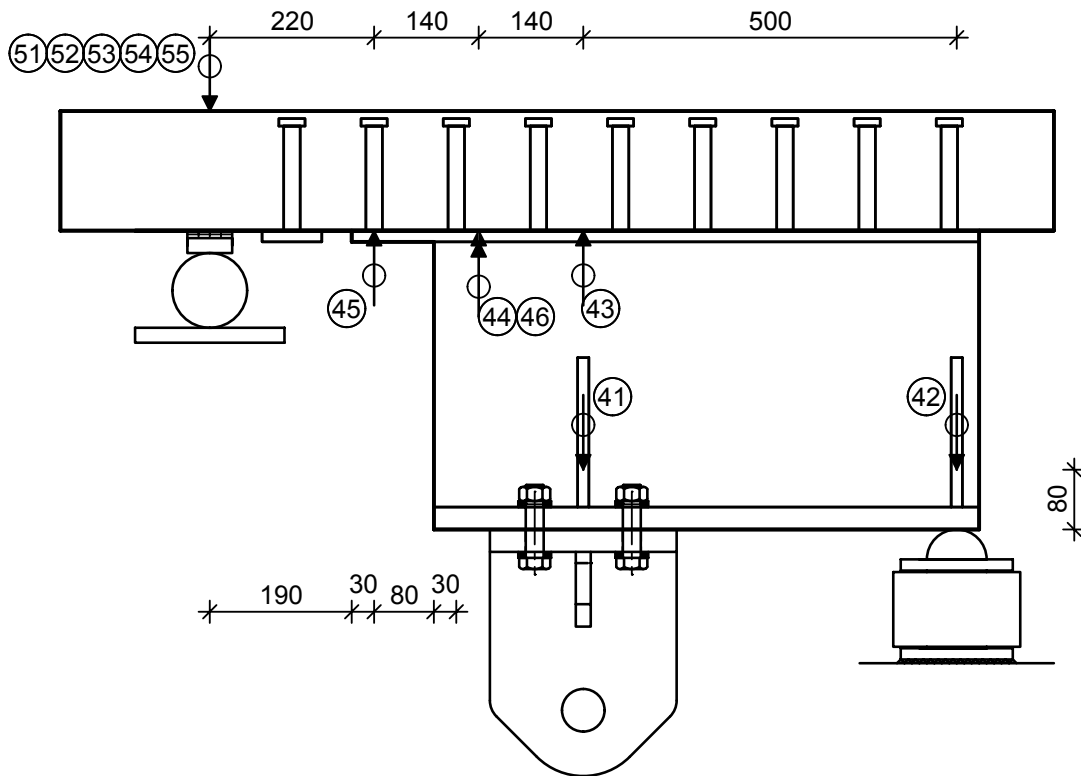
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rnh.uni-kl.de www.massivbau.uni-kl.de
DFG - Verbundträger mit Dübelleisten			B2_P_D1 B2_P_D1_MV B2_0_D1 B2_P_D1_St		
PLANINHALT					
B2 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	28	06.07.2011		

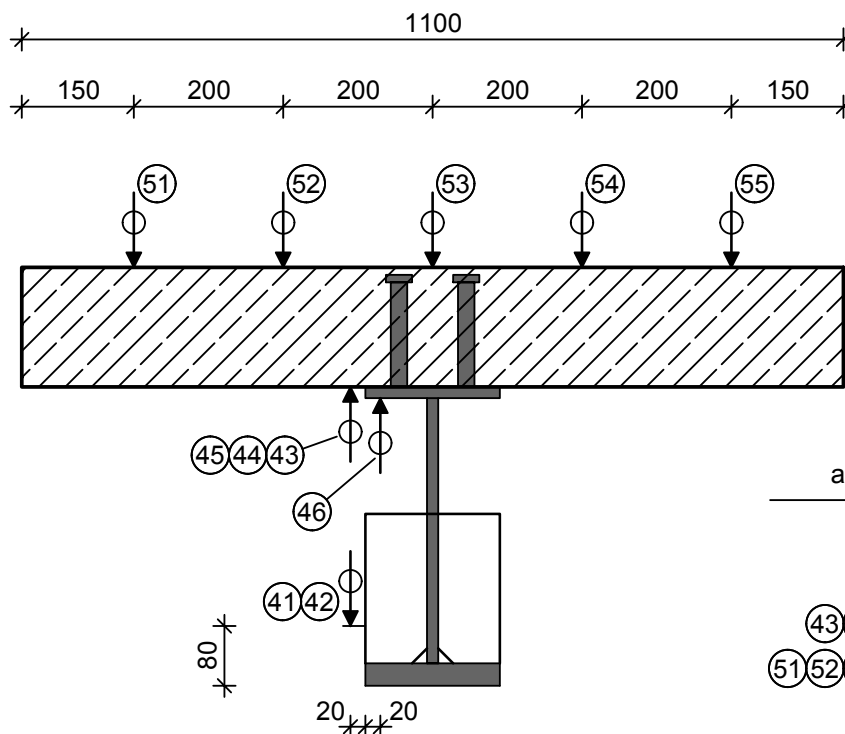
Ansicht

Anordnung Wegaufnehmer



Doppelkopffanker sind nicht dargestellt.

Schnitt



Weg- aufnehmer	Messlänge
41	100 mm
42	20 mm
43 44 45 46	40 mm
51 52 53 54 55	40 mm

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B2 Messtechnik - Wegaufnehmer

VERSUCHE

B2_P_D1 B2_P_D2_ka
 B2_0_D1 B2_N_D2_ka
 B2_N_D1 B2_P_D1_MV
 B2_P_D0 B2_P_D1_St
 B2_P_D2 B2_P_D1_Qb
 B2_N_D2



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MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

29

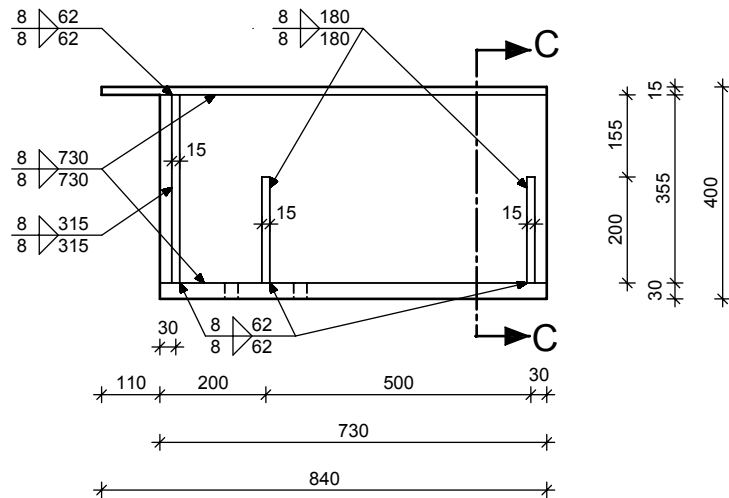
DATUM

06.07.2011

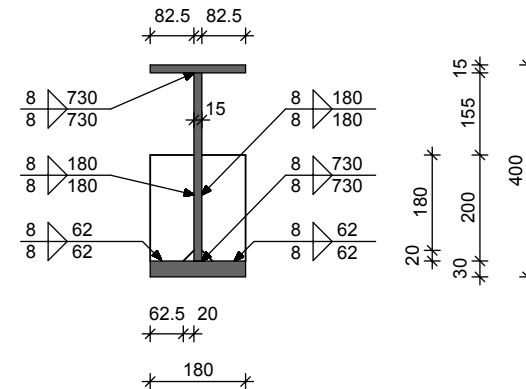
Allplan 2006

Herstellung Stahlträger

Ansicht M 1:10

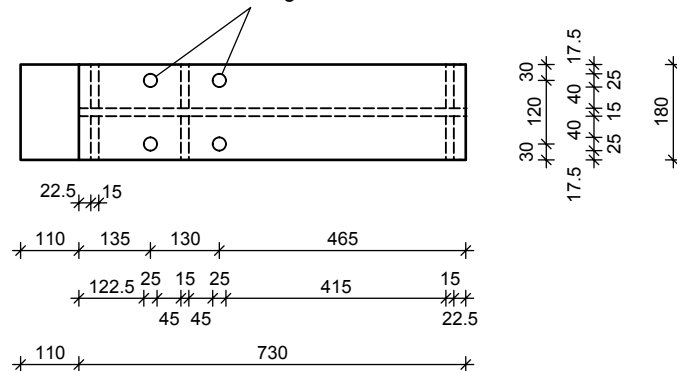


Schnitt M 1:10




Untersicht M 1:10

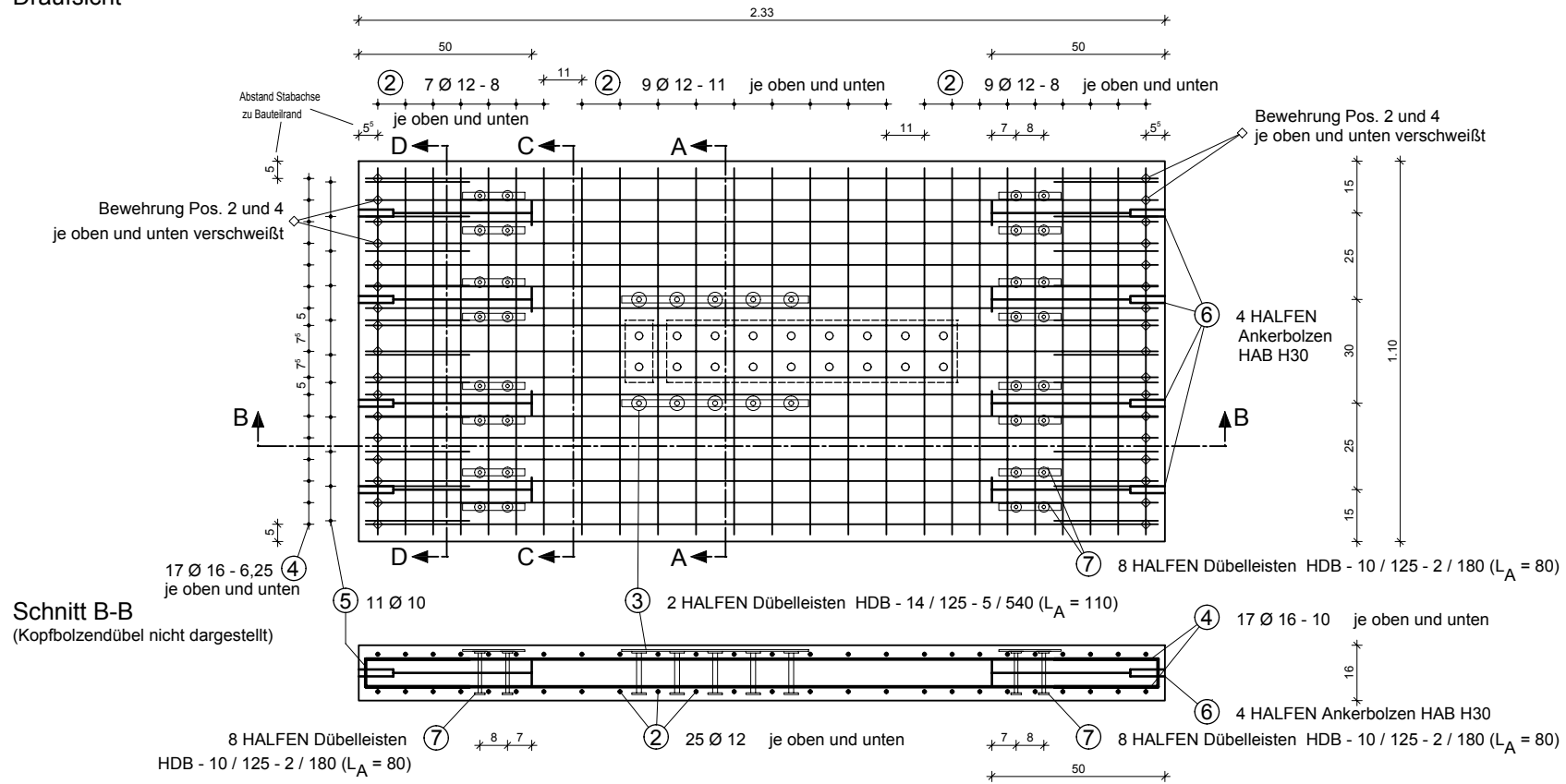
Bohrungen $\varnothing = 25 \text{ mm}$



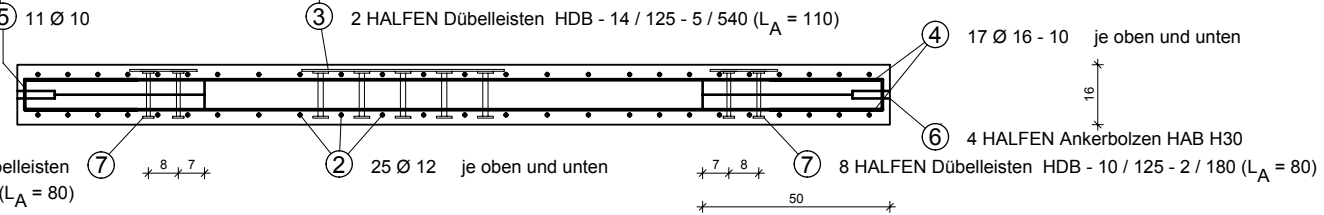
Material: S 235 JR

BAUHERR / OBJEKT		VERSUCH B2_P_D1_St		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@mrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten PLANINHALT B2 Herstellung Stahlträger				
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 31	DATUM 06.07.2011	

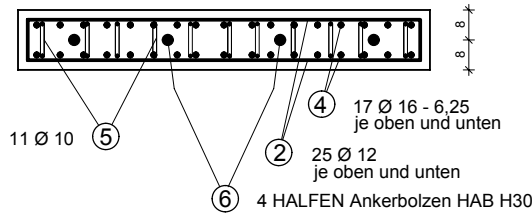
Draufsicht



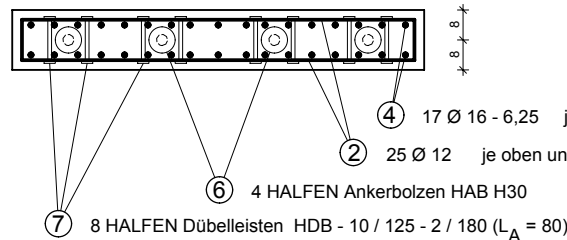
Schnitt B-B
(Kopfbolzendübel nicht dargestellt)



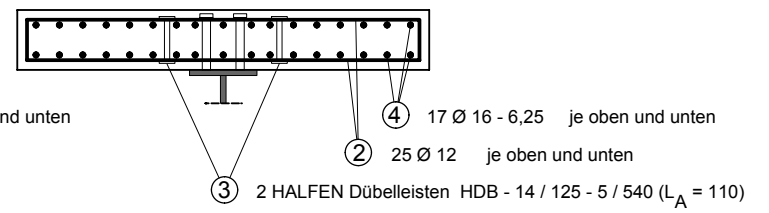
Schnitt D-D



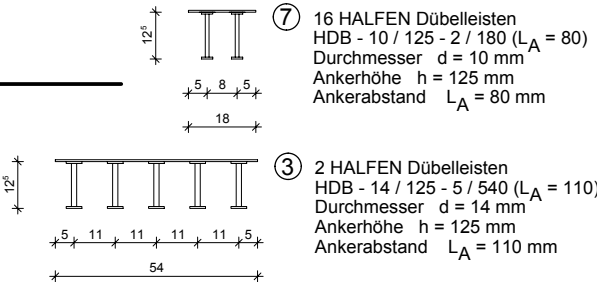
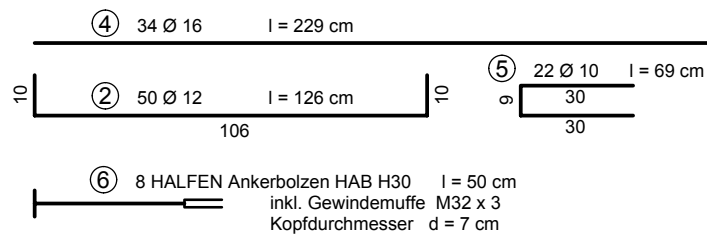
Schnitt C-C



Schnitt A-A




Stahlauszüge

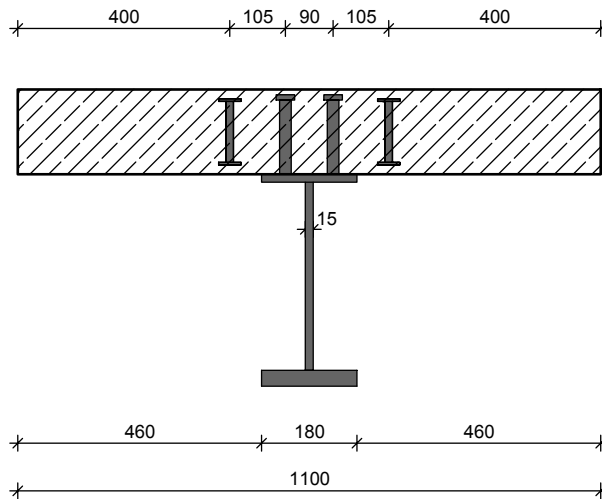


Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

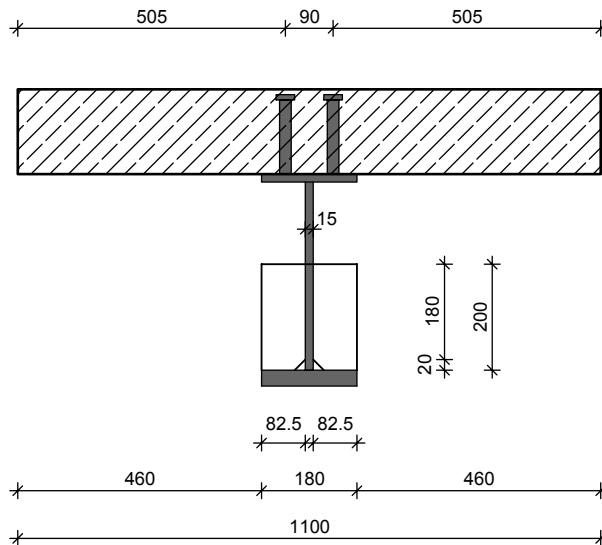
alle Maße in cm

BAUHERR / OBJEKT		VERSUCH		 Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Damier-Strasse Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 christian.balzer@uni-kl.de www.massivbau.uni-kl.de
DFG - Verbundträger mit Dübelleisten		B1_N_D1 B2_N_D1		
PLANINHALT		B1/B2 Bewehrung		
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 33	DATUM 06.07.2011	

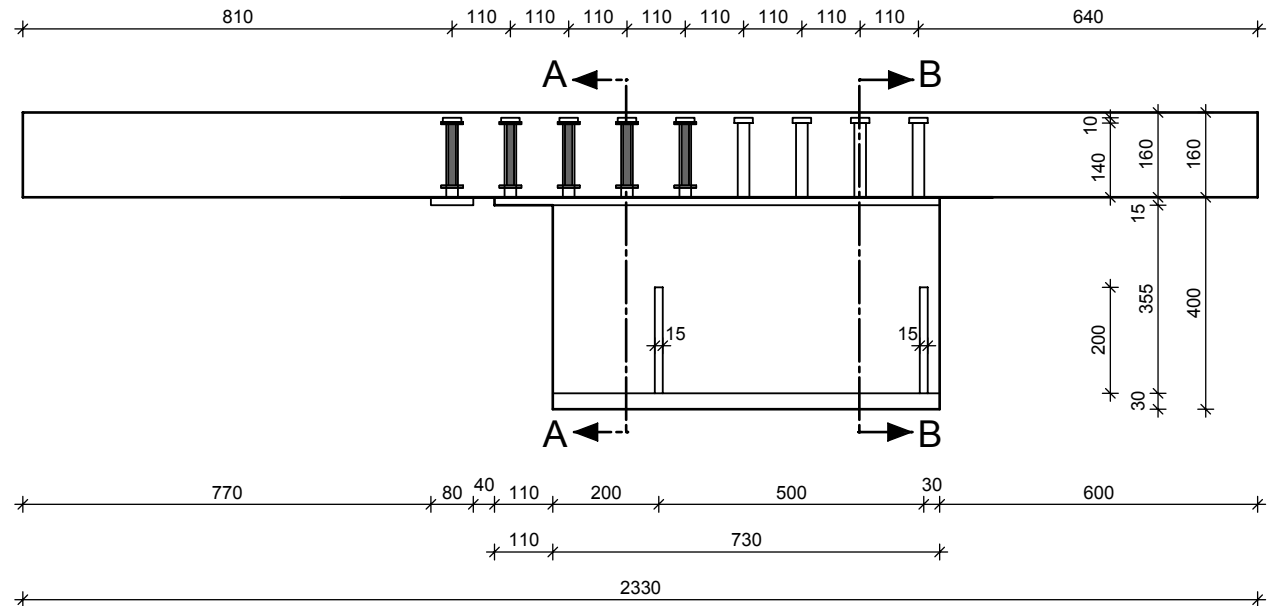
Schnitt A-A




Schnitt B-B

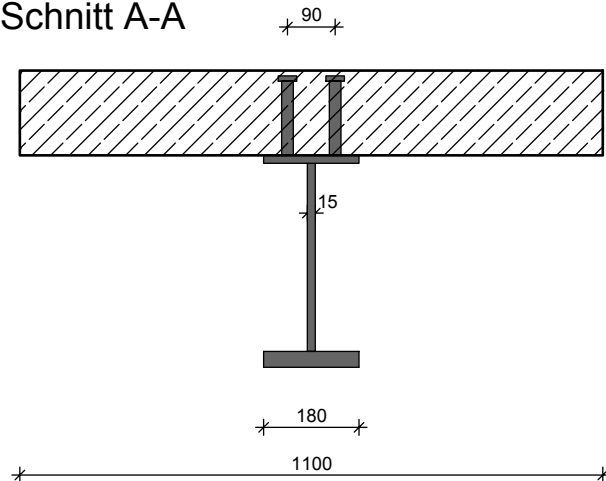


Ansicht

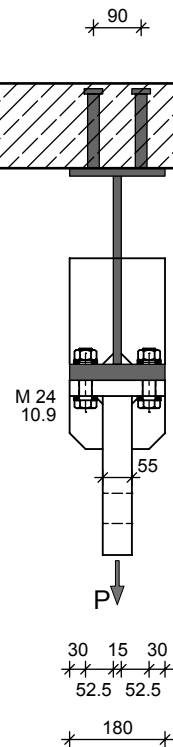


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DFG - Verbundträger mit Dübelleisten			B2_N_D1		
PLANINHALT					
B2 Versuchskörper					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	34	06.07.2011		

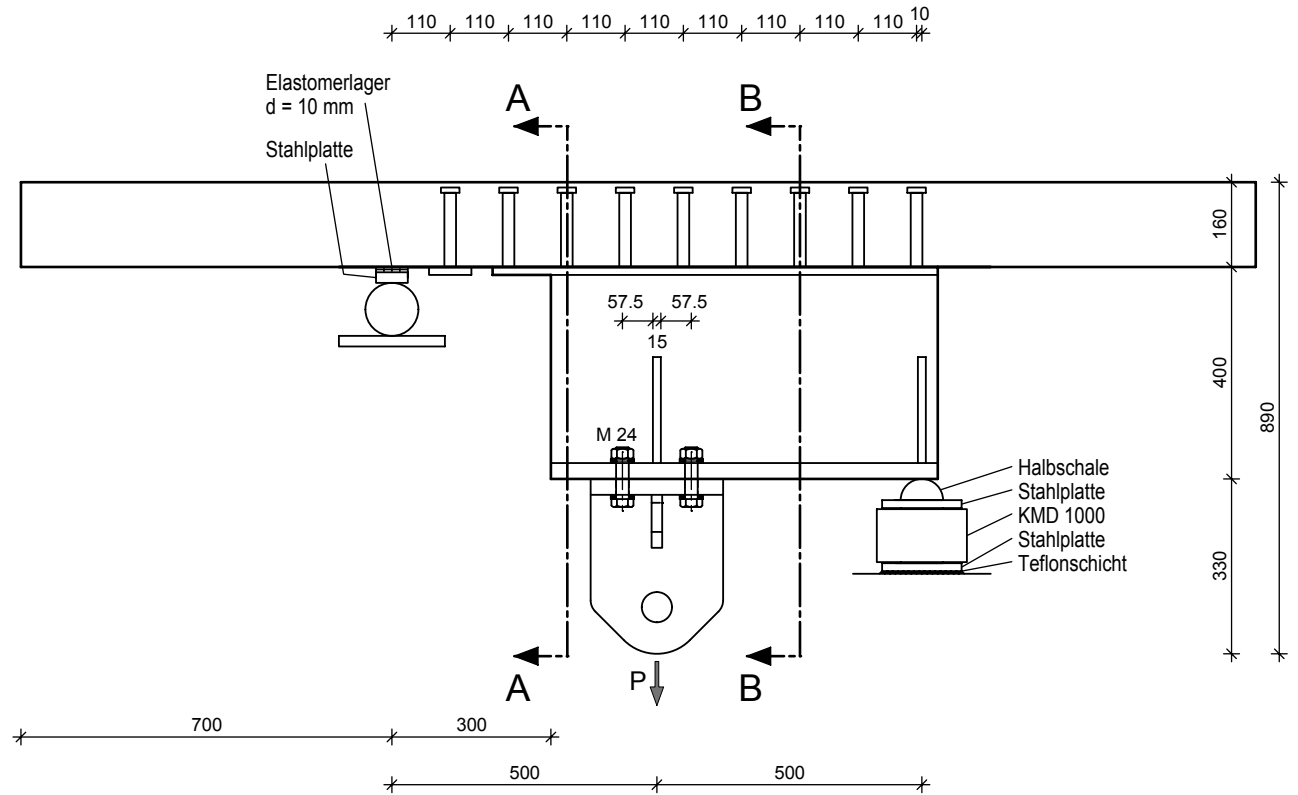
Schnitt A-A




Schnitt B-B

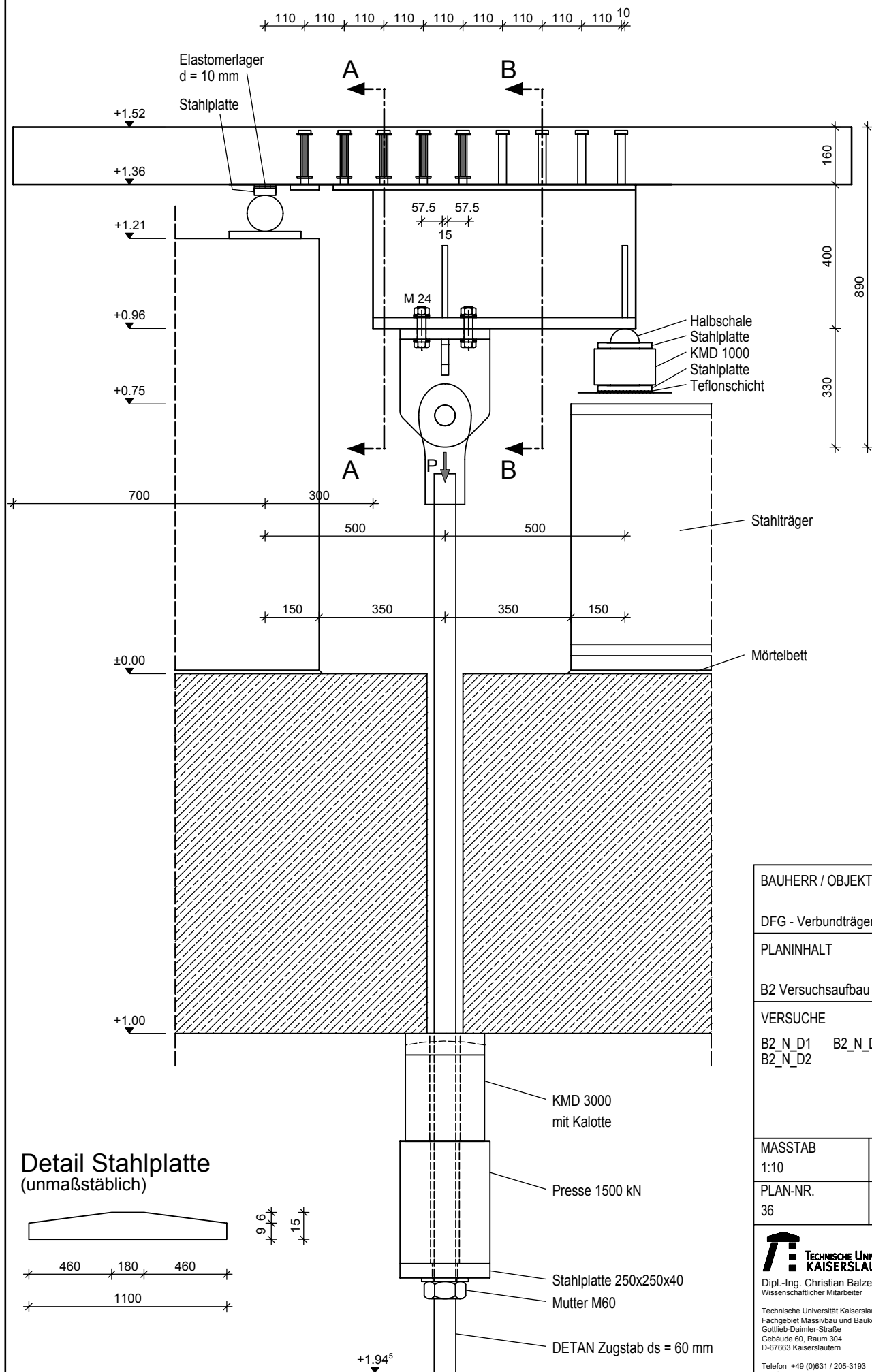



Ansicht



Doppelkopfkanker sind nicht dargestellt.

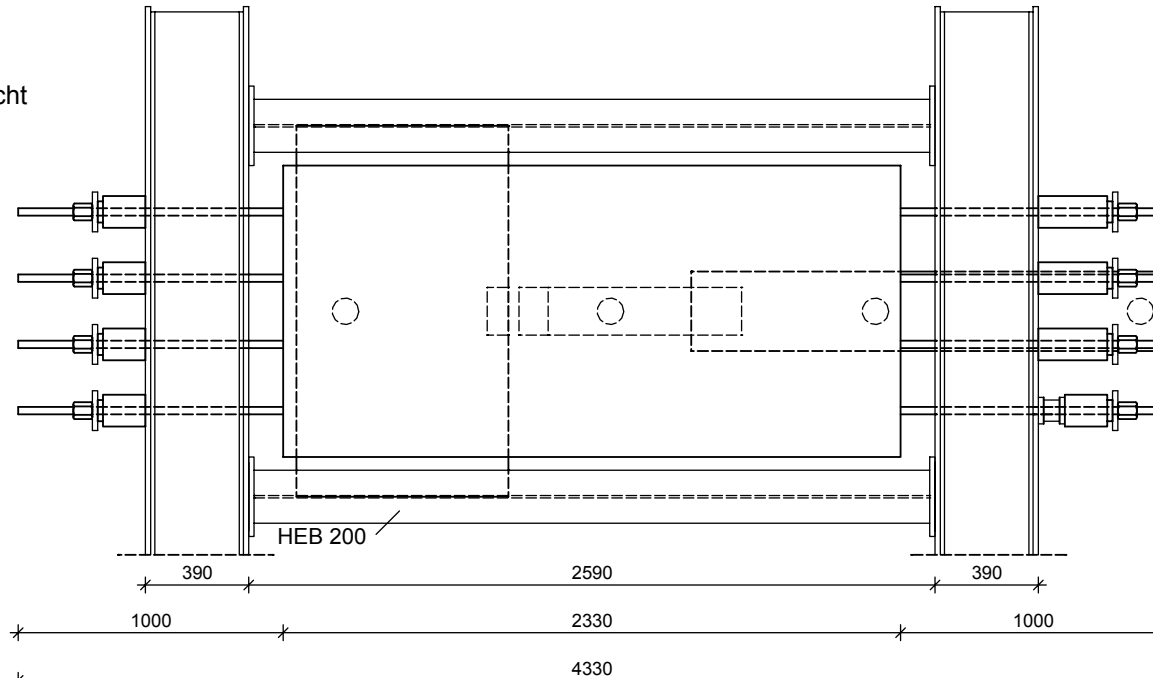
BAUHERR / OBJEKT			VERSUCHE		 <div>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</div> <div>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</div> <div>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</div> <div>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhtk.uni-kl.de www.massivbau-kl.de</div>
DFG - Verbundträger mit Dübelleisten			B2_N_D1 B2_N_D2_kA B2_N_D2		
PLANINHALT					
B2 Versuchsaufbau					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	35	06.07.2011		



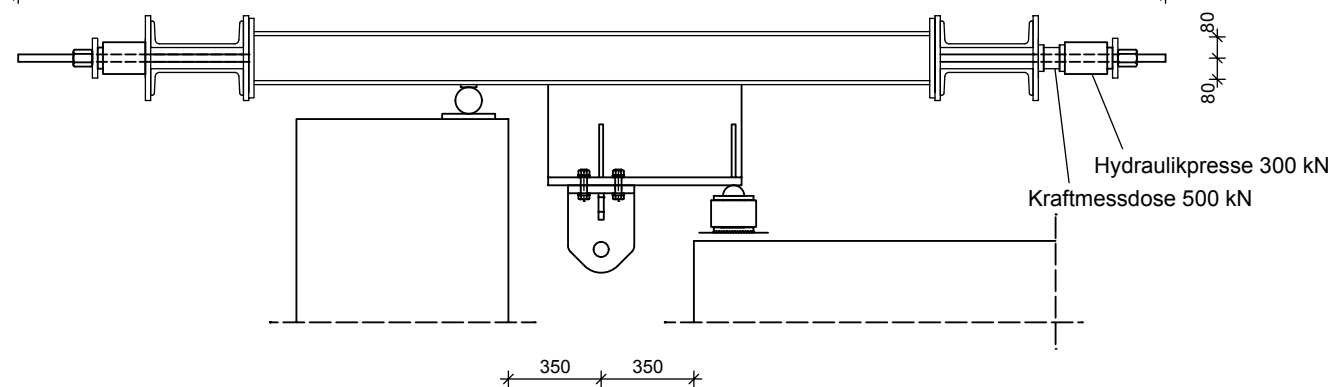
BAUHERR / OBJEKT	
DFG - Verbundträger mit Dübelleisten	
PLANINHALT	
B2 Versuchsaufbau	
VERSUCHE	
B2_N_D1 B2_N_D2_kA B2_N_D2	
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1
PLAN-NR. 36	DATUM 06.07.2011
 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de	


Aufbringung der Zugkraft

Draufsicht



Ansicht

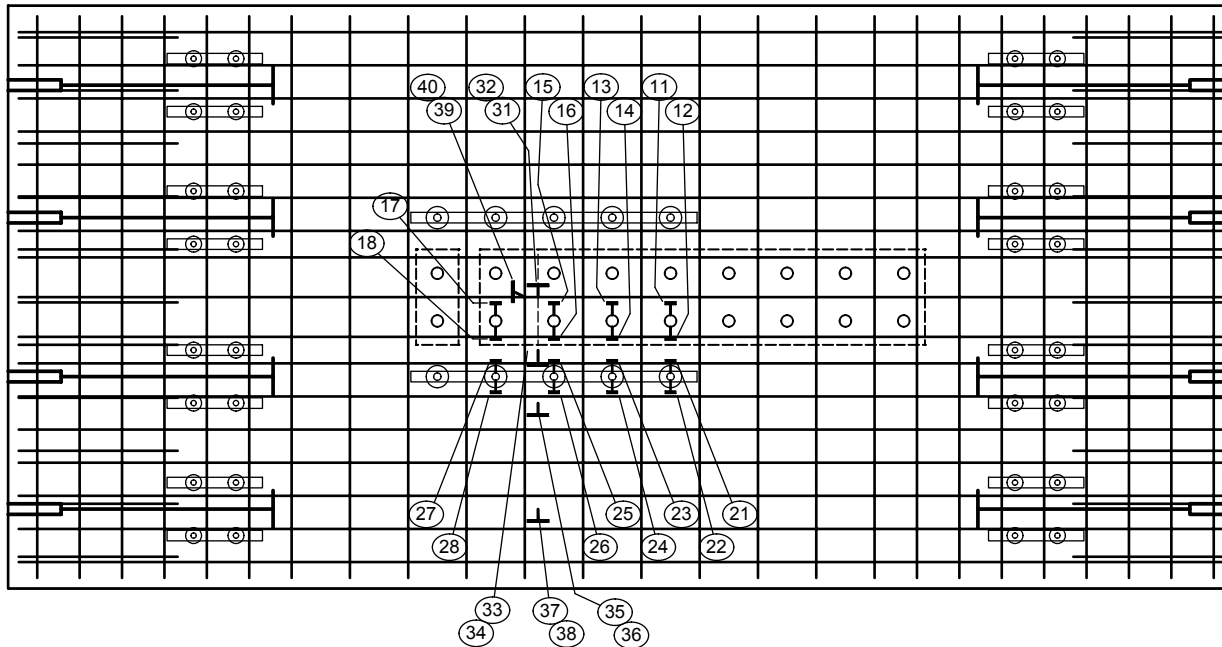


BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rthk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B2_N_D1 B2_N_D2_ka B2_N_D2		
PLANINHALT					
B2 Aufbringung Normalkraft					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:20	SCHN 771/4-1	37	06.07.2011		

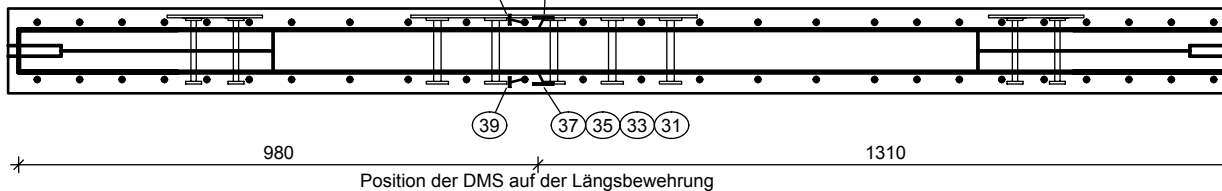
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

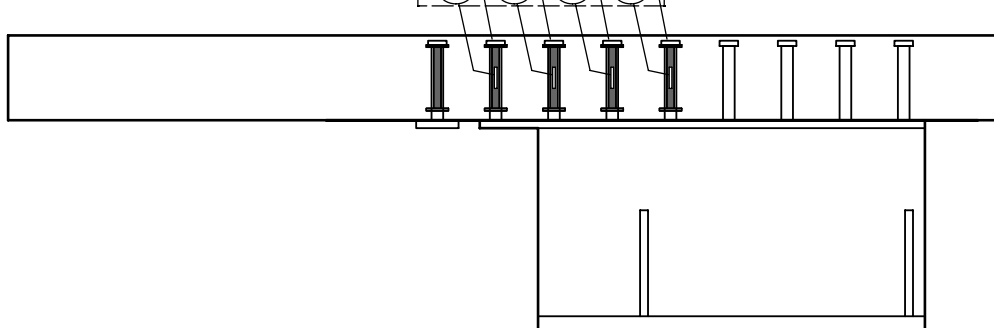
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

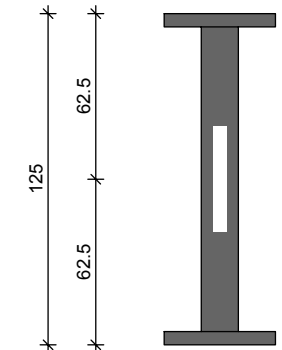
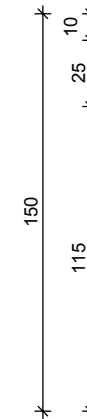


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



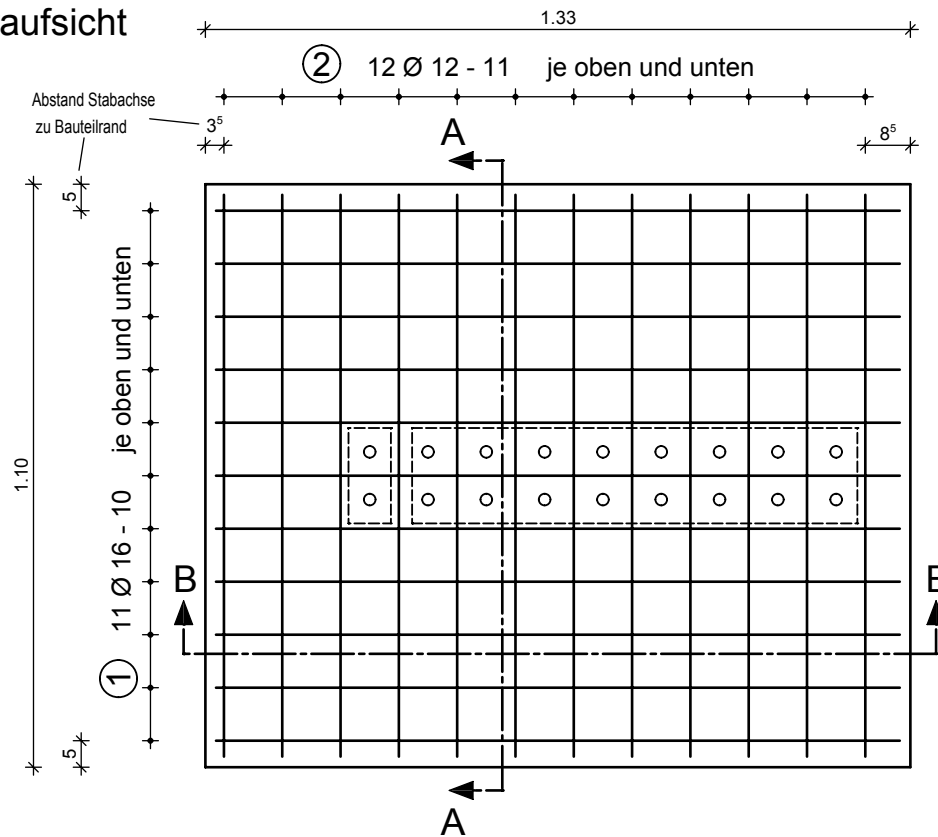
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

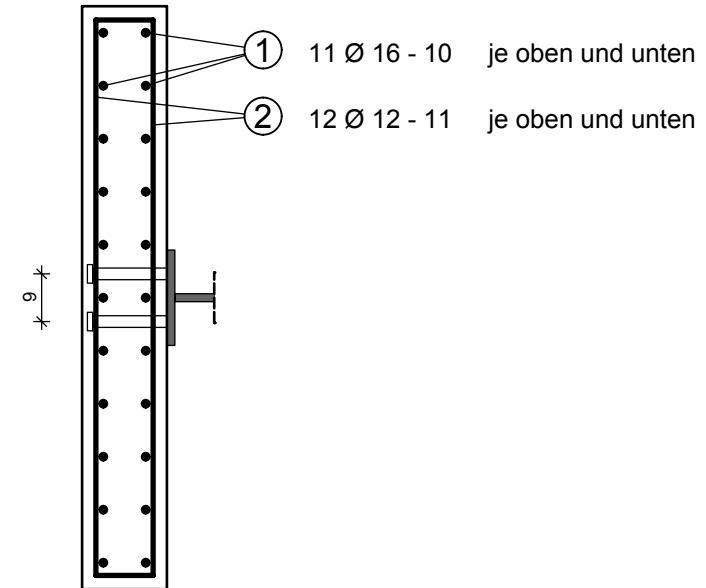
DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT		VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@mrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B2_N_D1		
PLANINHALT				
B2 Messtechnik - DMS				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:2, 1:10	SCHN 771/4-1	38	06.07.2011	

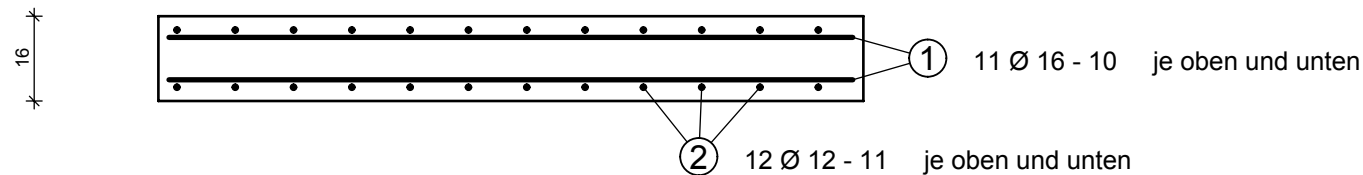
Draufsicht



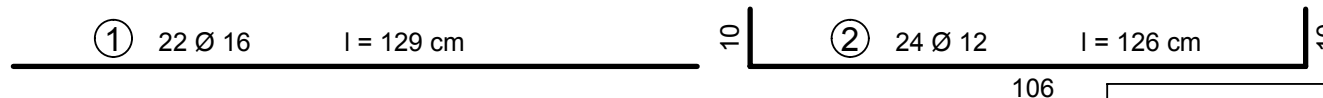
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)




Stahlauszüge



Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

alle Maße in cm

BAUHERR / OBJEKT			VERSUCH B2_P_D0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	43	07.07.2011		

Technical drawing showing a cross-section of a mechanical assembly. The drawing includes dimensions in millimeters (mm) for various parts and overall dimensions.

Dimensions:

- Overall width: 1100 mm
- Distance from left edge to centerline: 460 mm
- Distance from centerline to right edge: 460 mm
- Distance from left edge to first vertical line: 505 mm
- Distance between vertical lines: 90 mm
- Distance from second vertical line to right edge: 505 mm
- Distance from centerline to left edge of housing: 82.5 mm
- Distance from centerline to right edge of housing: 82.5 mm
- Distance from centerline to bottom of housing: 15 mm
- Distance from bottom of housing to base: 180 mm
- Distance from base to top of housing: 200 mm
- Distance from top of housing to top of shaft: 140 mm
- Distance from top of shaft to top of housing: 10 mm
- Distance from top of housing to top of shaft: 160 mm
- Distance from top of shaft to top of housing: 30 mm
- Distance from top of shaft to top of housing: 355 mm
- Distance from top of shaft to top of housing: 400 mm

Technical drawing of a bridge cross-section showing dimensions and reinforcement details.

Horizontal Dimensions (mm):

- Top: 310, 110, 110, 110, 110, 110, 140
- Bottom: 270, 80, 40, 110, 200, 500, 30, 100
- Bottom (partial): 110, 730, 100
- Total width: 1330

Vertical Dimensions (mm):

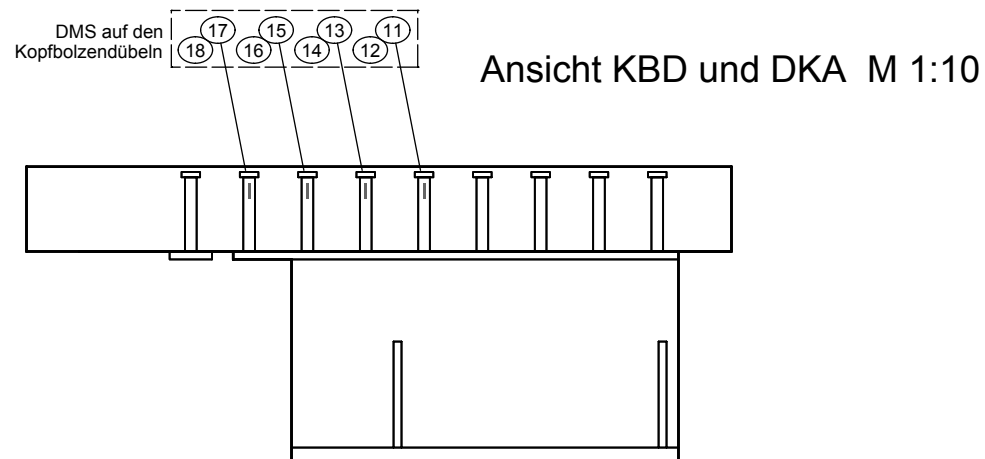
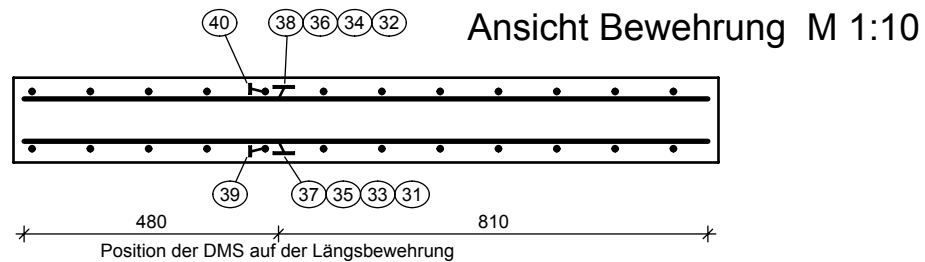
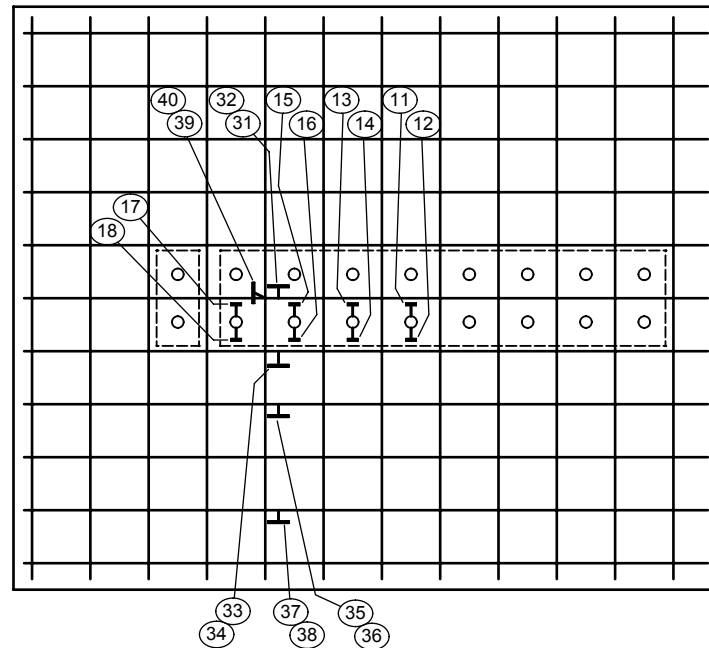
- Right side: 10, 140, 15, 160, 200, 30, 355, 400
- Left side: 160

Reinforcement Details:

- Top reinforcement: 8 bars, labeled A and B with arrows indicating direction.
- Bottom reinforcement: 2 bars, labeled 15.
- Vertical distance between reinforcement: 355 mm.

$$H/B = 297.0 / 420.0 (0.12\text{m}^2)$$

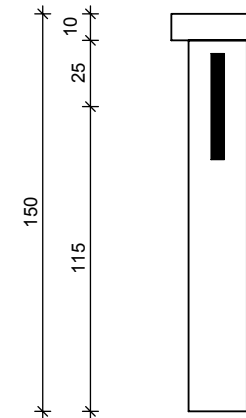
Draufsicht M 1:10



Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.


Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.



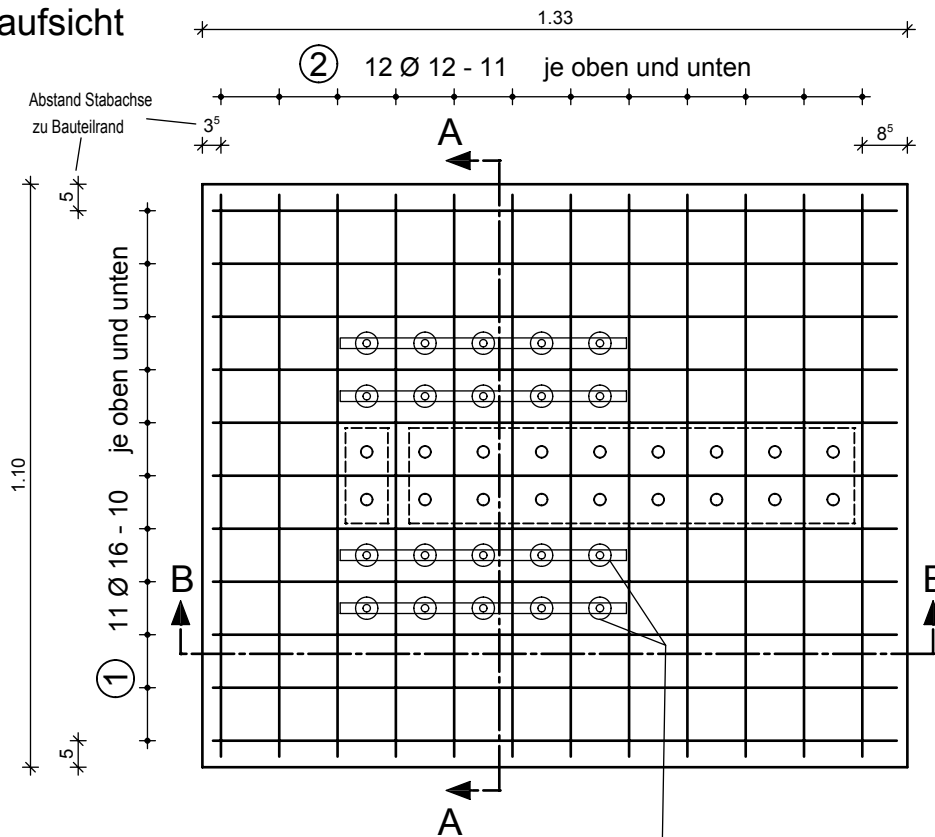
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

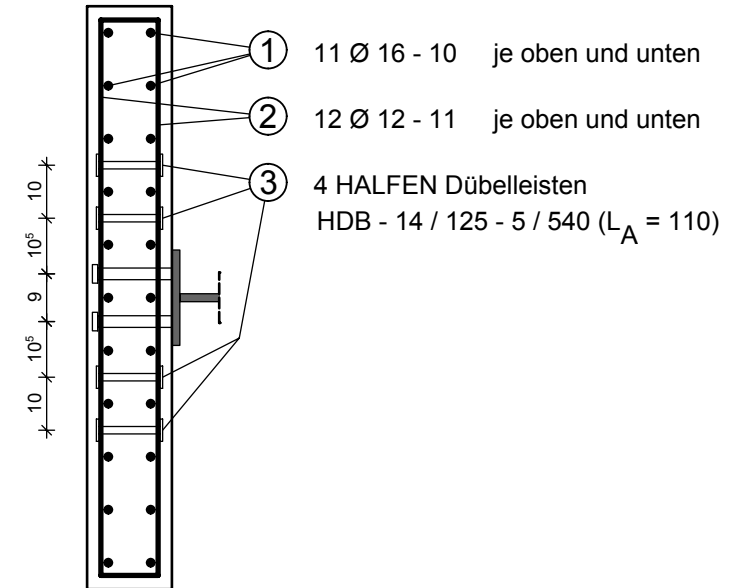
DMS auf Kopfbolzendübeln	11 - 18
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT			VERSUCH B2_P_D0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Messtechnik - DMS					
MASSTAB 1:2, 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 48	DATUM 07.07.2011		

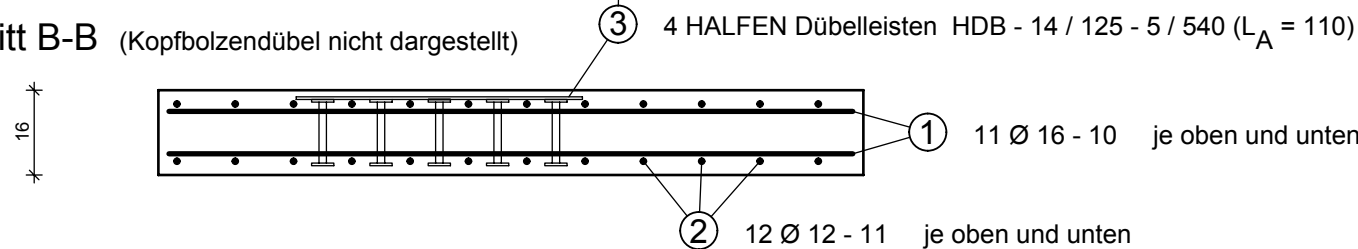
Draufsicht



Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

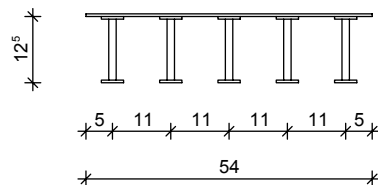


Stahlauszüge




Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

alle Maße in cm



3 4 HALFEN Dübelleisten HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14 \text{ mm}$
Ankerhöhe $h = 125 \text{ mm}$
Ankerabstand $L_A = 110 \text{ mm}$

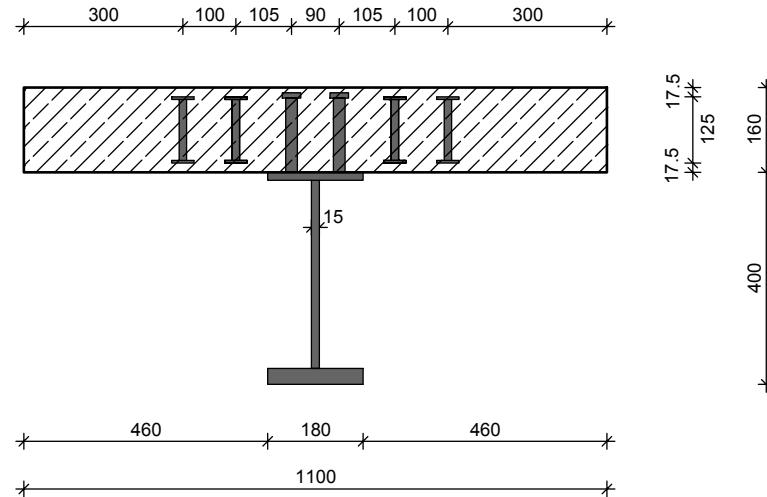
106

BAUHERR / OBJEKT			VERSUCH B2_P_D2		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trkr.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	53	07.07.2011		

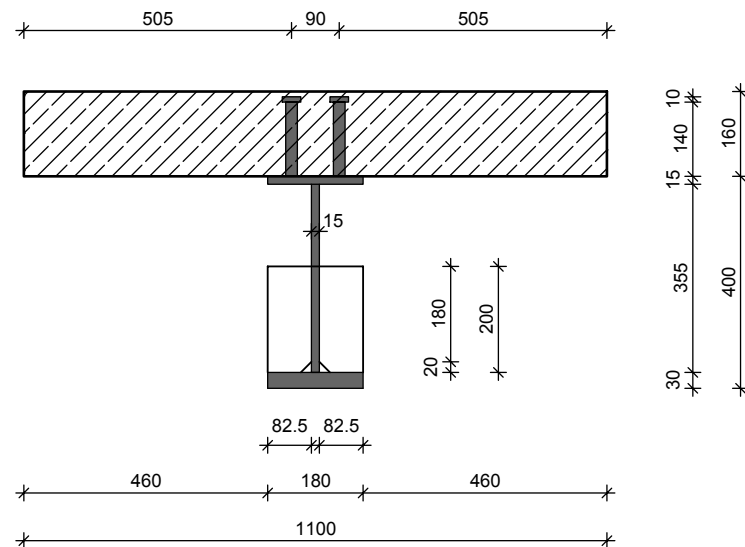
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

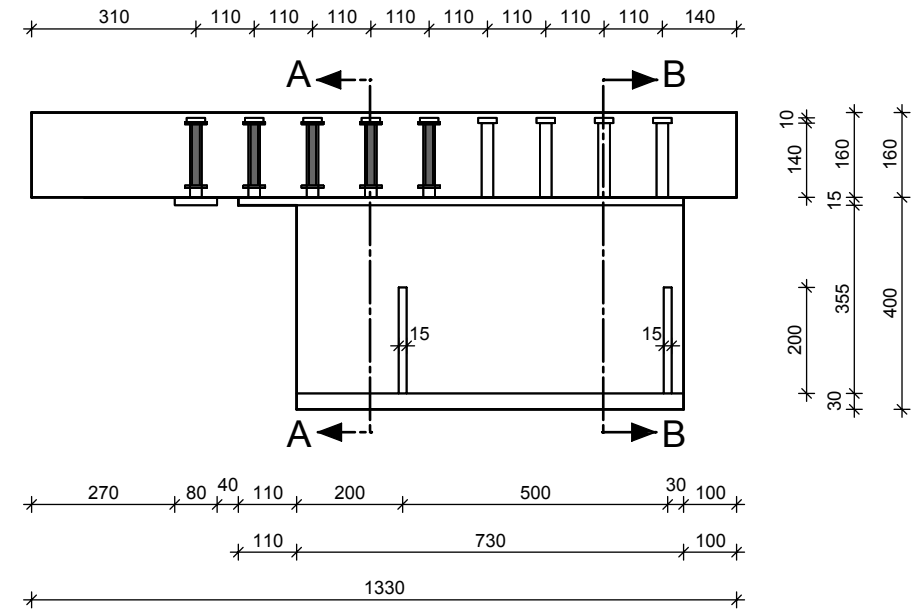
Schnitt A-A




Schnitt B-B

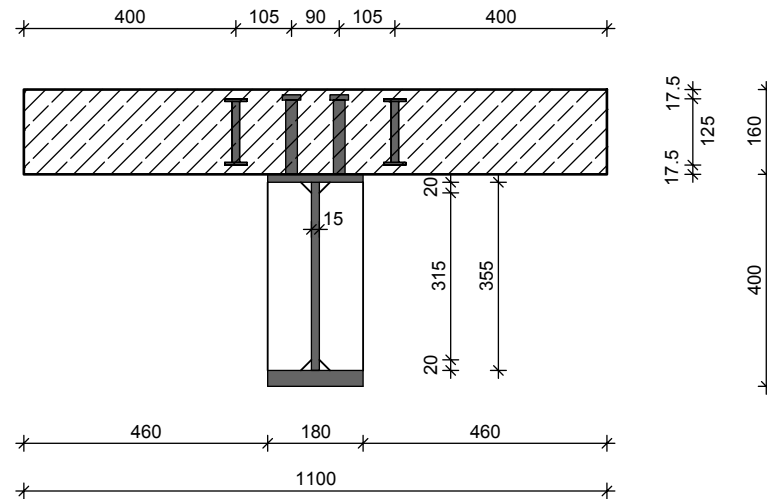


Ansicht

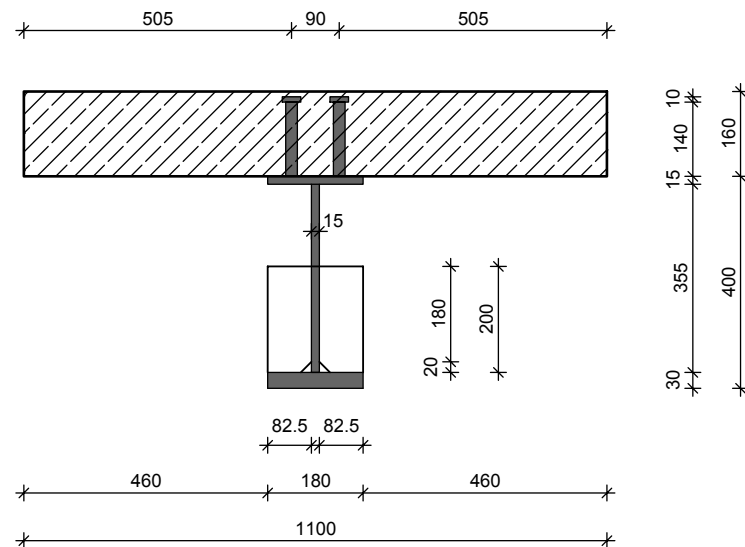


BAUHERR / OBJEKT		VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B2_P_D2		
PLANINHALT				
B2 Versuchskörper				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	54	07.07.2011	

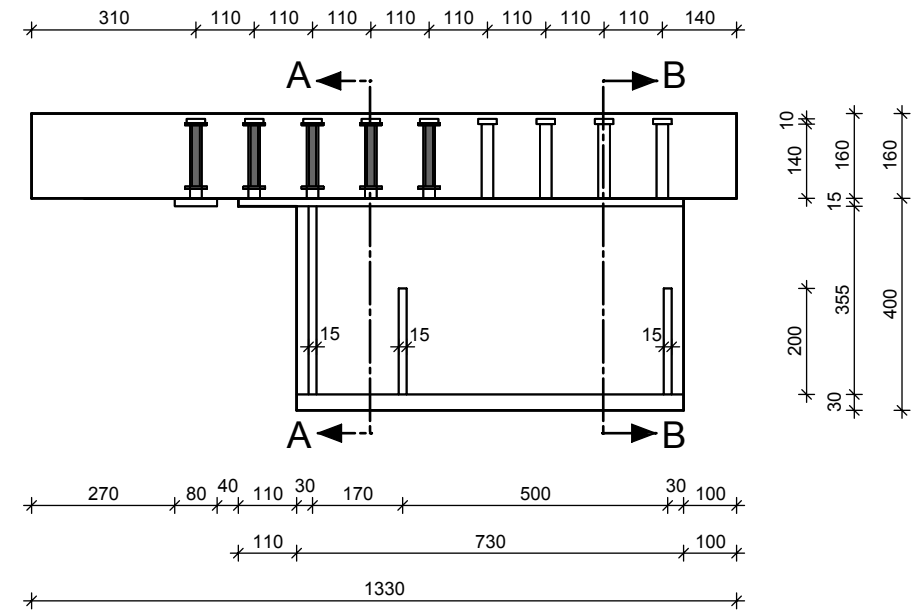
Schnitt A-A



Schnitt B-B



Ansicht



BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B2 Versuchskörper

MASSTAB
1:10

PROJEKT-NR.
SCHN 771/4-1

PLAN-NR.
55

VERSUCH

B2_P_D1_St

DATUM
07.07.2011

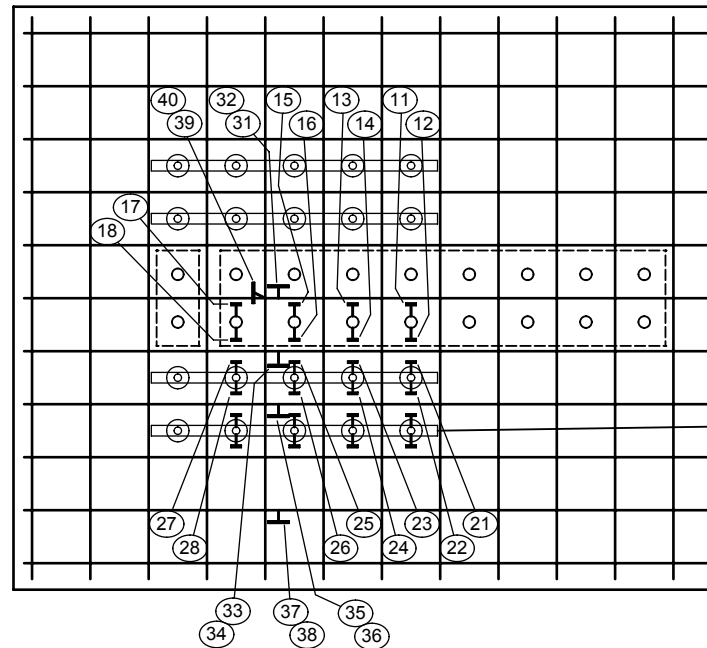


Dipl.-Ing. Christian Balzer
Wissenschaftlicher Mitarbeiter

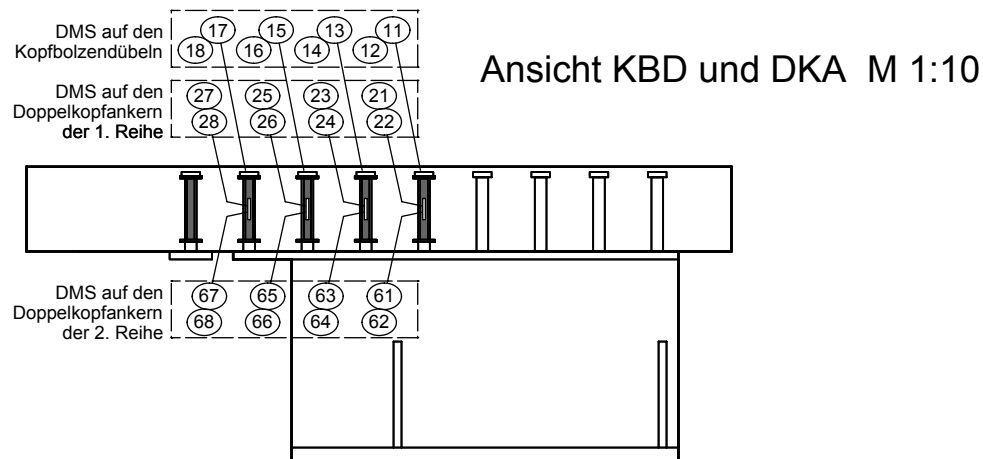
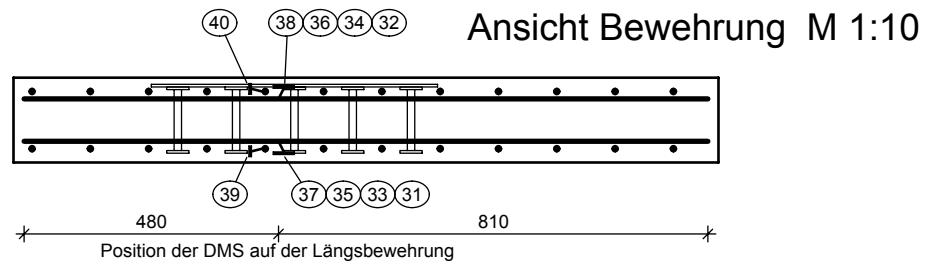
Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

Telefon +49 (0)631 / 205-3193
Telefax +49 (0)631 / 205-3555
c.balzer@trk.uni-kl.de
www.massivbau-kl.de

Draufsicht M 1:10



DMS auf den Doppelkopfkankern der 2. Reihe identisch mit denen der 1. Reihe Nummerierung von (61) bis (68)

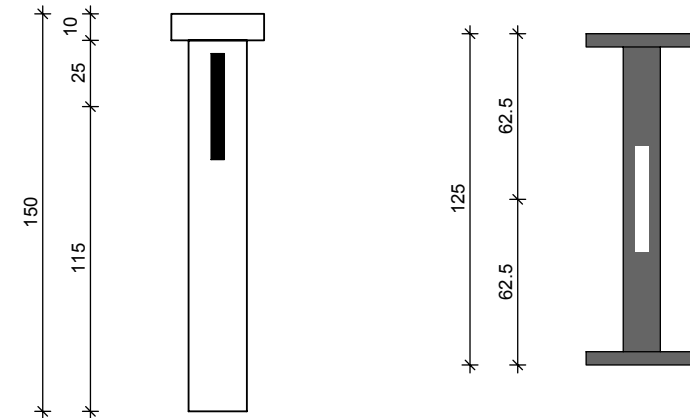


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



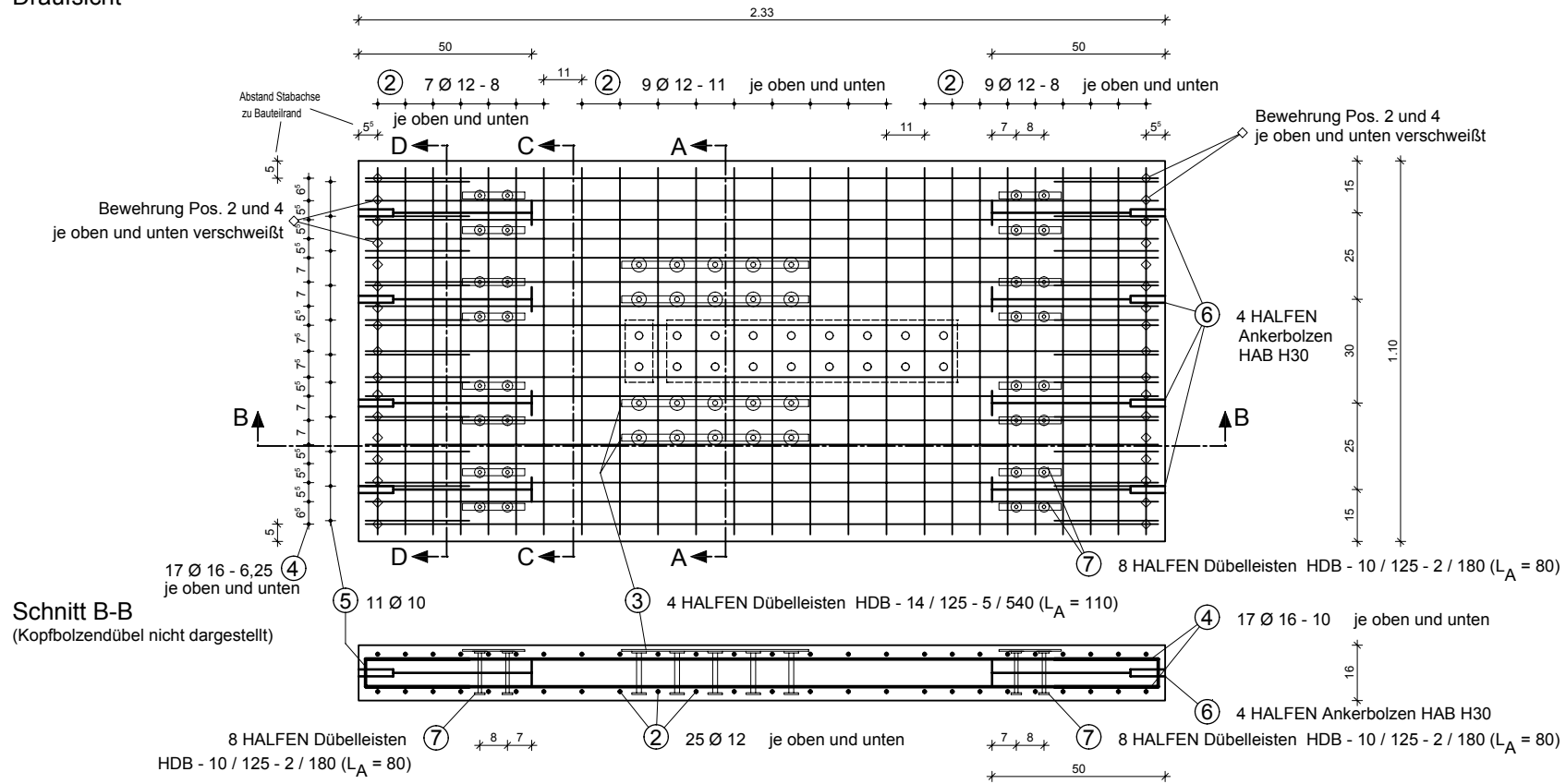
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern der 1. Reihe	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40
DMS auf Doppelkopfkankern der 2. Reihe	61 - 68

BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B2_P_D2 B2_P_D2_ka		
PLANINHALT					
B2 Messtechnik - DMS					
MASSTAB 1:2, 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 58	DATUM 07.07.2011		

Draufsicht

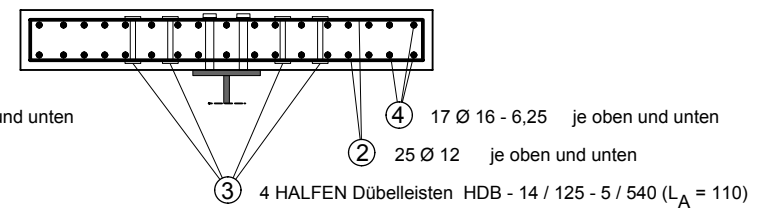
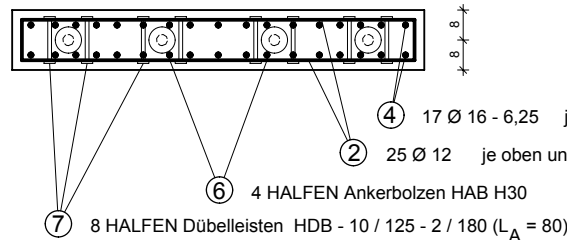
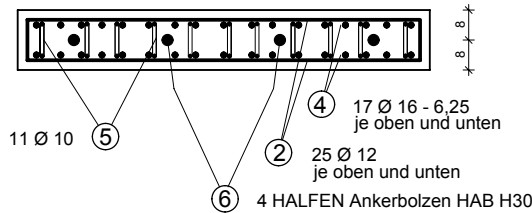


Schnitt B-B
(Kopfbolzendübel nicht dargestellt)

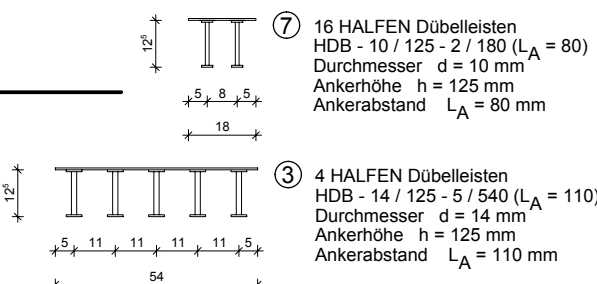
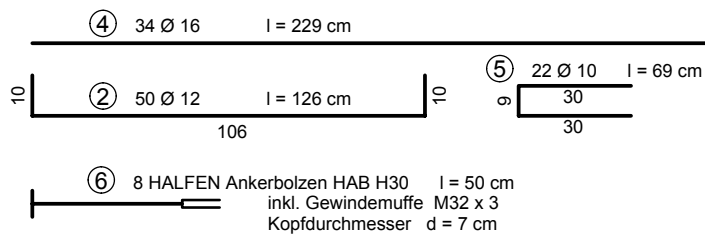
Schnitt D-D

Schnitt C-C

Schnitt A-A




Stahlauszüge

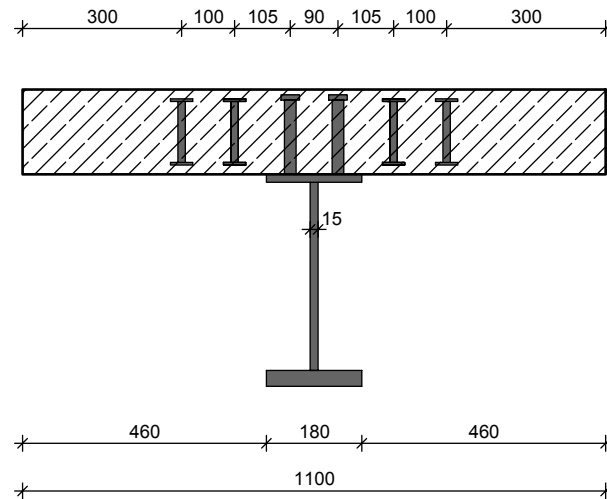


Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

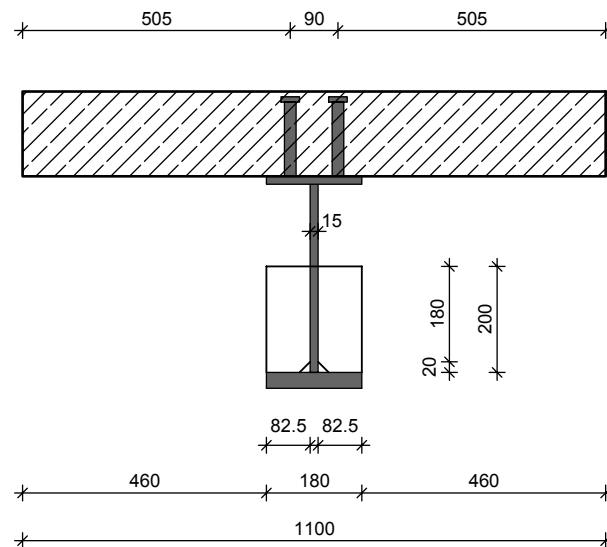
alle Maße in cm

BAUHERR / OBJEKT			VERSUCH		 <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3655 cbsbalzer@mb.uni-kl.de www.mbs.uni-kl.de</p>
DFG - Verbundträger mit Dübelleisten			B1_N_D2 B2_N_D2		
PLANINHALT					
B1/B2 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	63	07.07.2011		

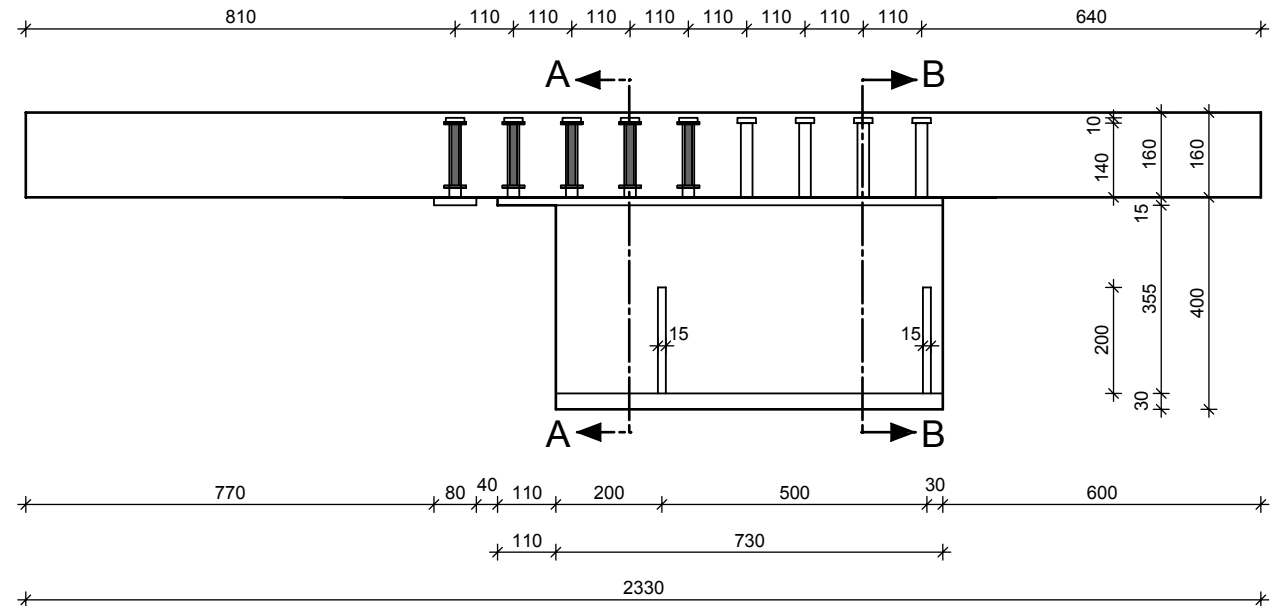
Schnitt A-A




Schnitt B-B

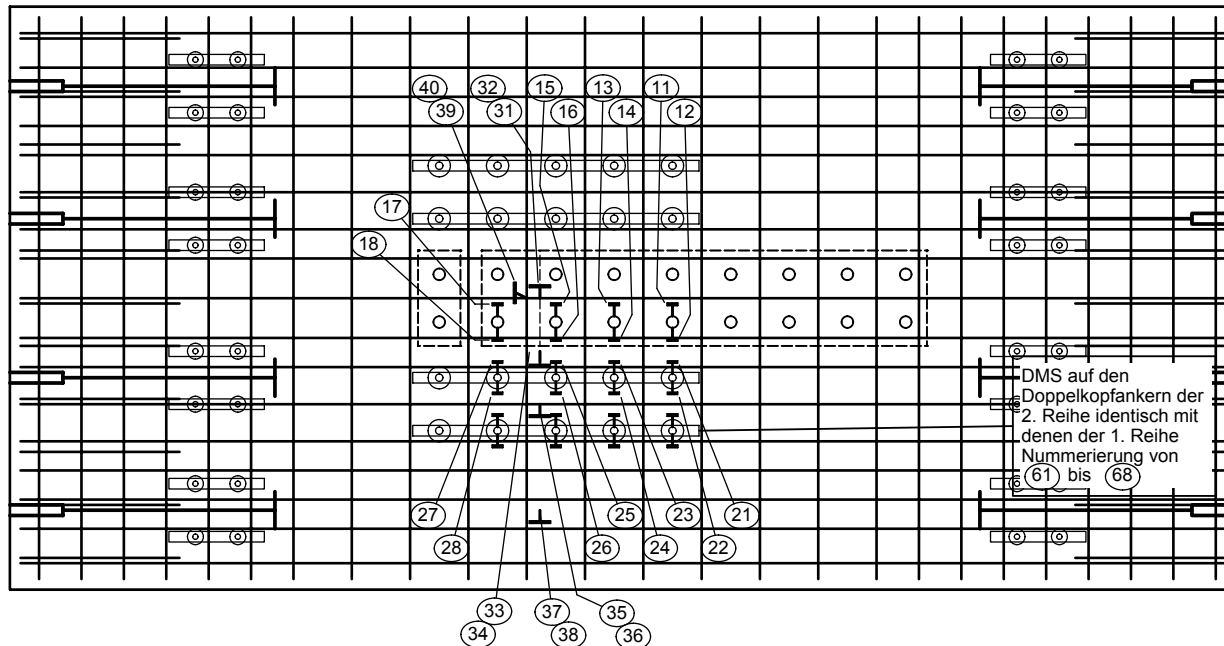


Ansicht

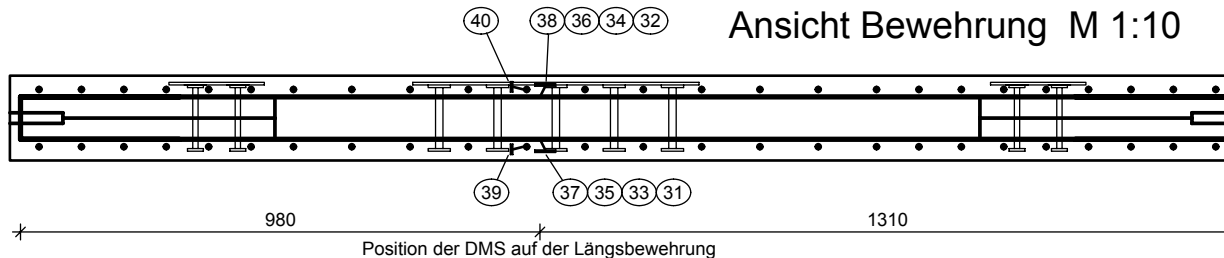


BAUHERR / OBJEKT			VERSUCH B2_N_D2		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Versuchskörper					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	64	07.07.2011		

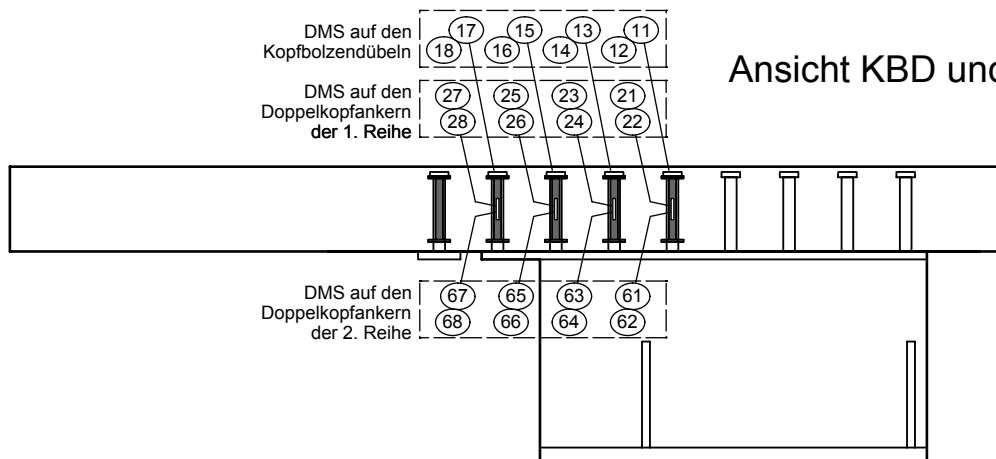
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

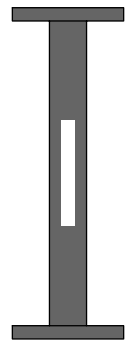
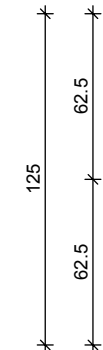
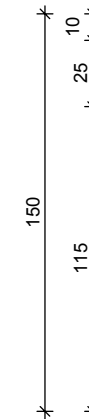


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



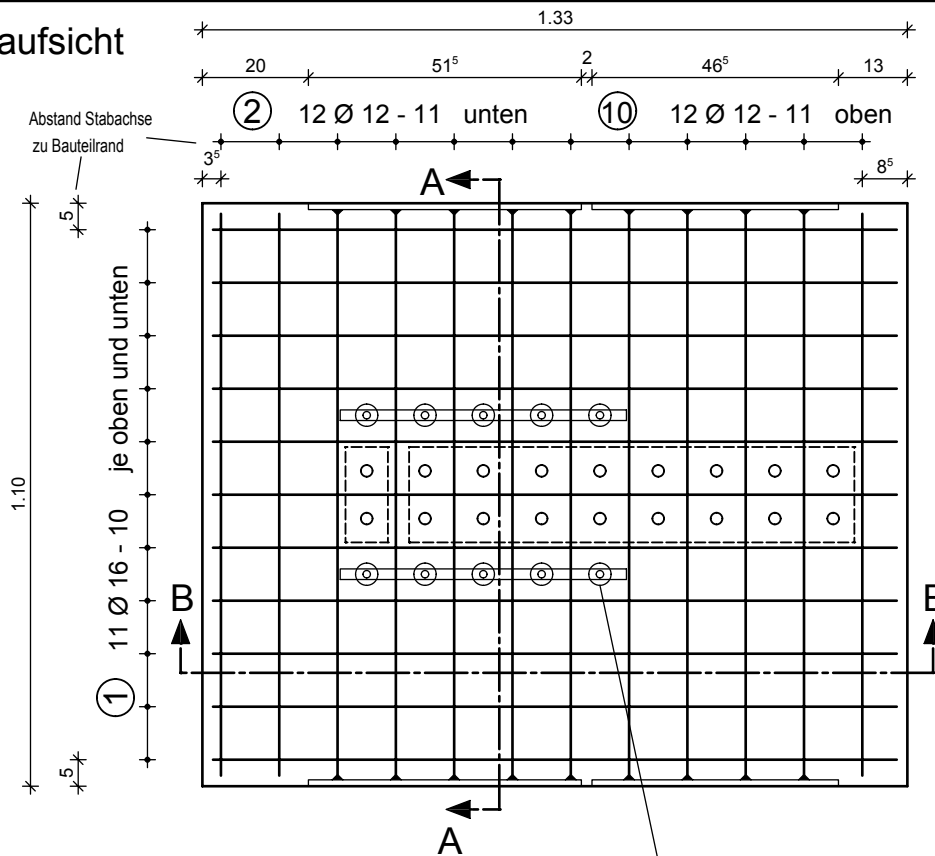
Die Kopfbolzendübel und Doppelkopfkankern werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

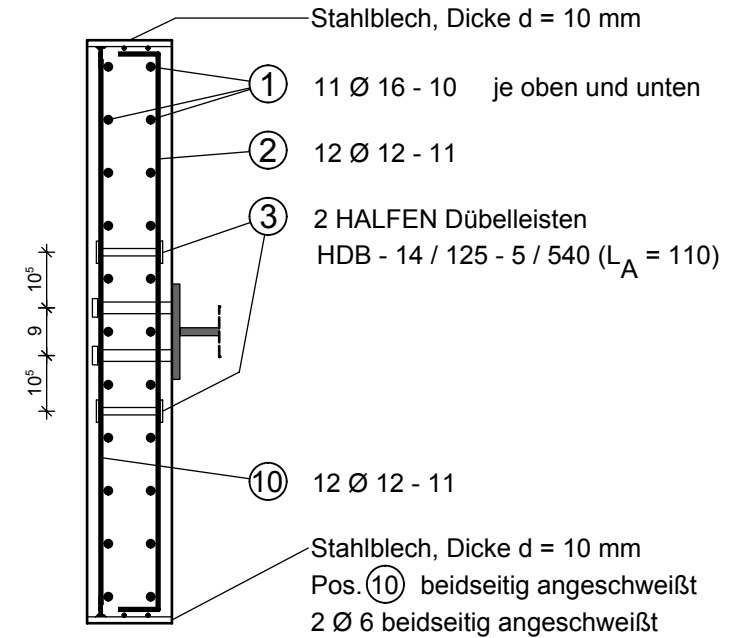
DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern der 1. Reihe	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40
DMS auf Doppelkopfkankern der 2. Reihe	61 - 68

BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rtrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B2_N_D2 B2_N_D2_ka		
PLANINHALT			B2 Messtechnik - DMS		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	68	07.07.2011		

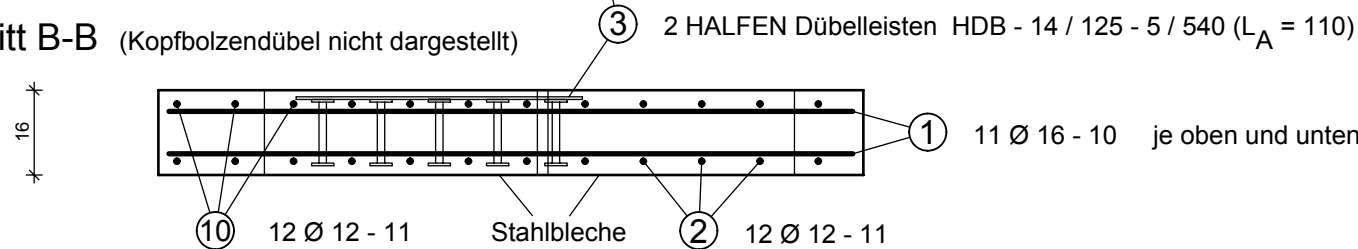
Draufsicht



Schnitt A-A



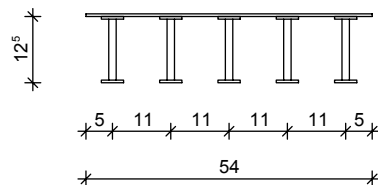
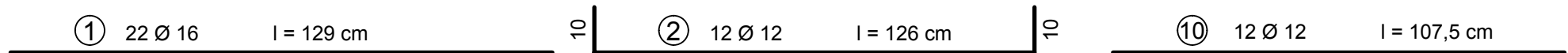
Schnitt B-B (Kopfbolzendübel nicht dargestellt)



Betondeckung: $c_{nom} = 2 \text{ cm}$
an jeder Stelle


alle Maße in cm

Stahlauszüge



3 2 HALFEN Dübelleisten
HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser d = 14 mm
Ankerhöhe h = 125 mm
Ankerabstand $L_A = 110 \text{ mm}$

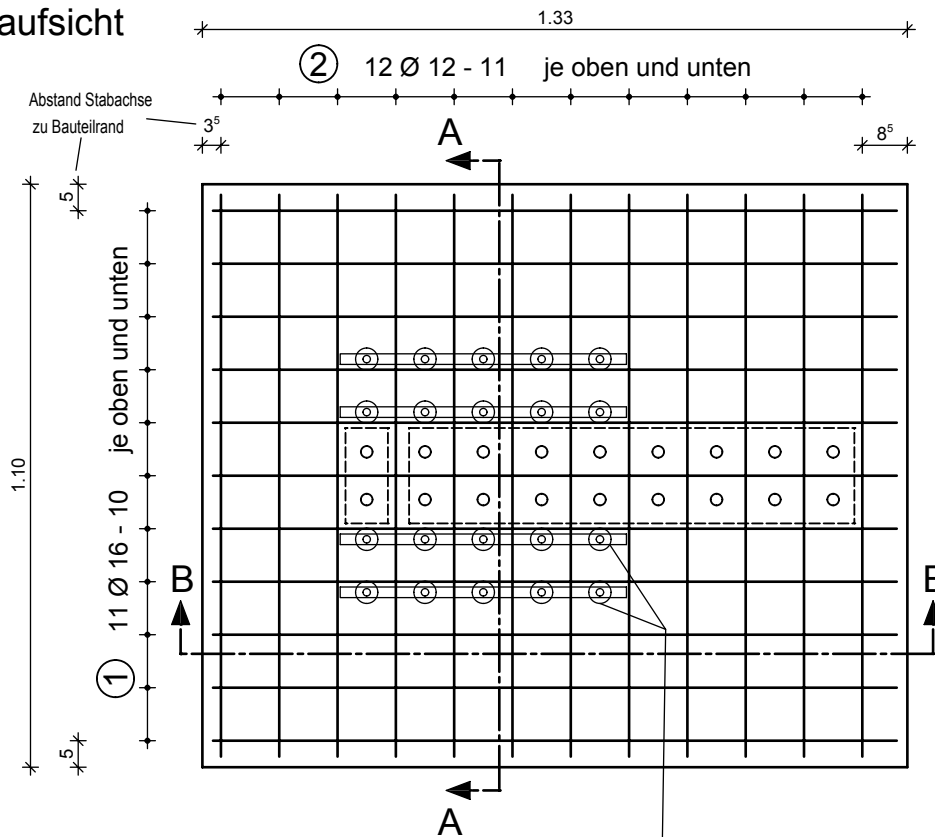
106

BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B2_P_D1_Qb		
PLANINHALT		B2 Bewehrung		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	72	07.07.2011	

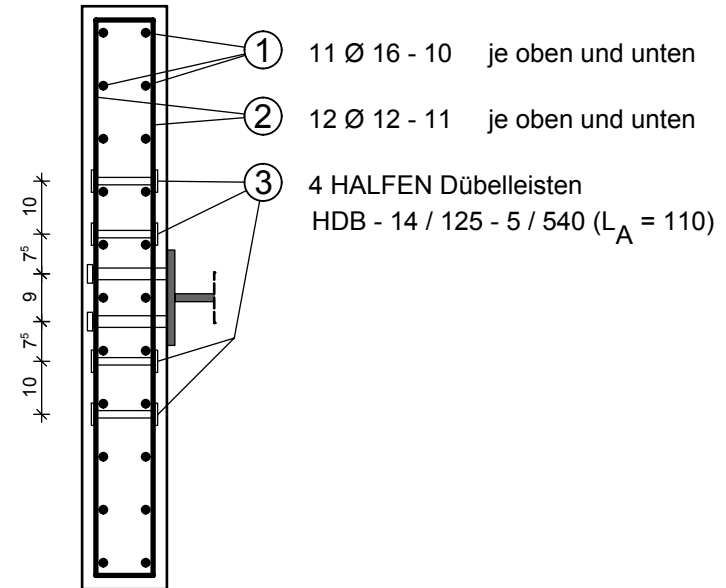
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

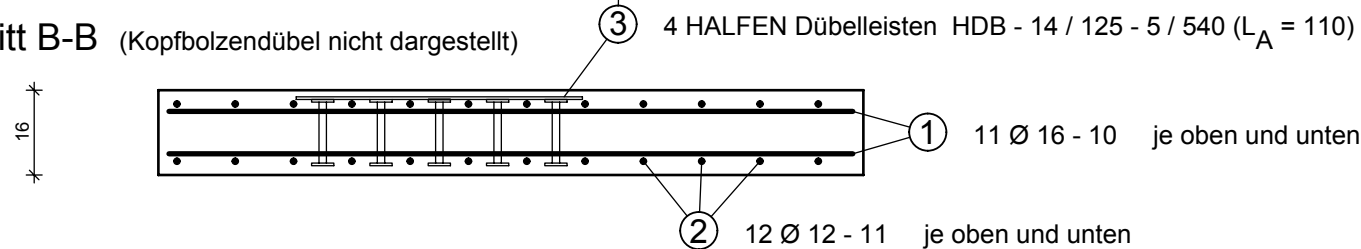
Draufsicht



Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

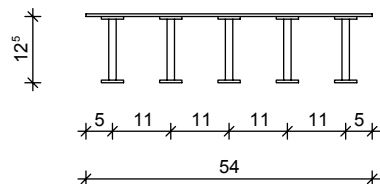


Stahlauszüge




Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

alle Maße in cm



③ 4 HALFEN Dübelleisten
HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14$ mm
Ankerhöhe $h = 125$ mm
Ankerabstand $L_A = 110$ mm

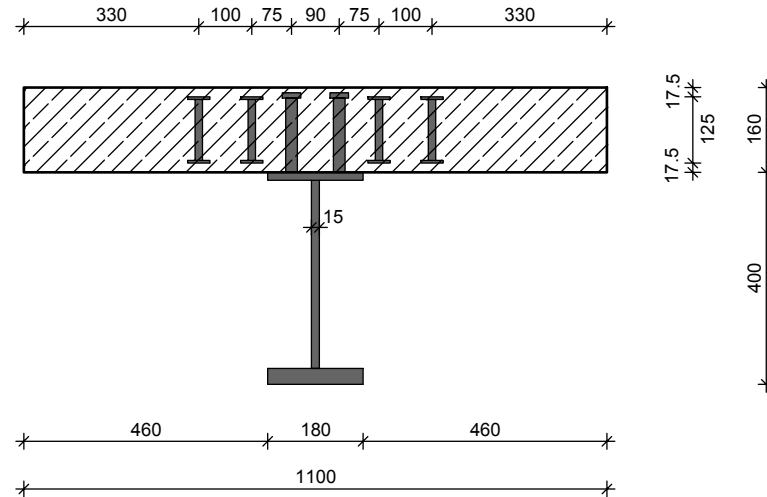
106

BAUHERR / OBJEKT			VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trkr.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B2_P_D2_ka		
PLANINHALT					
B2 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	73	07.07.2011		

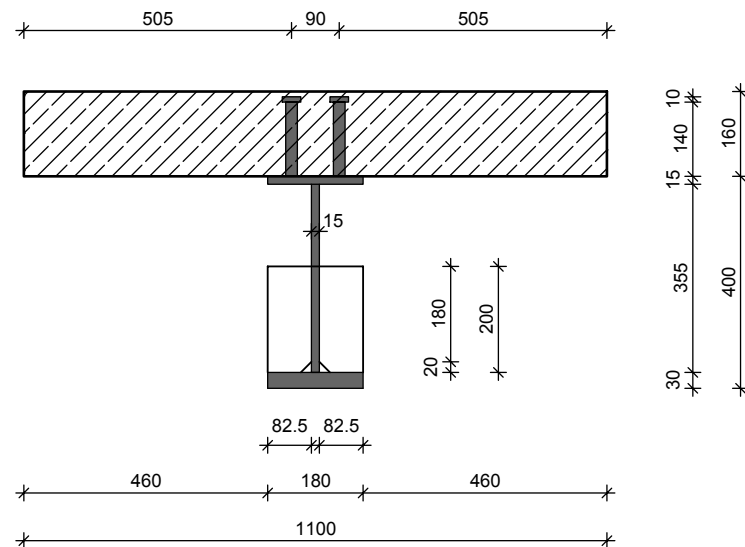
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

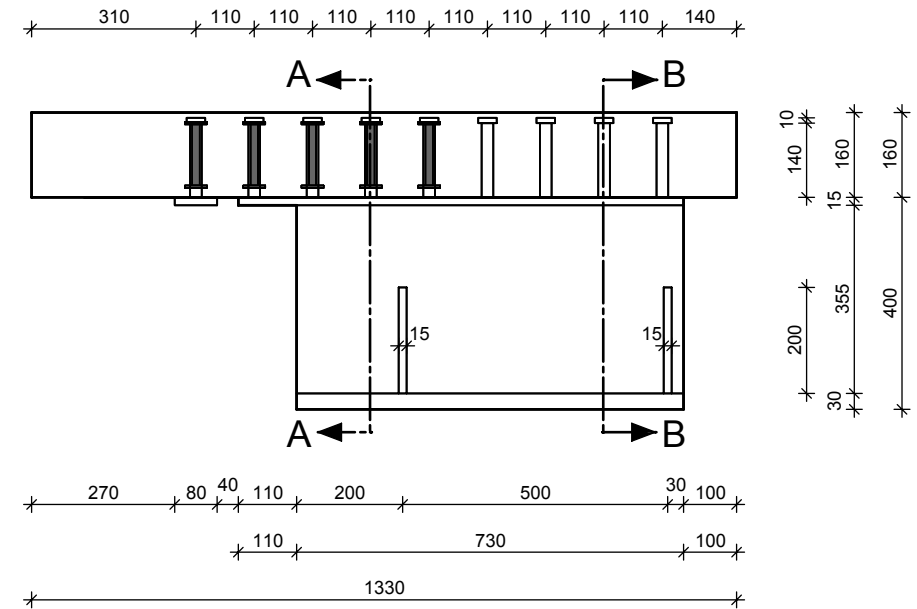
Schnitt A-A




Schnitt B-B

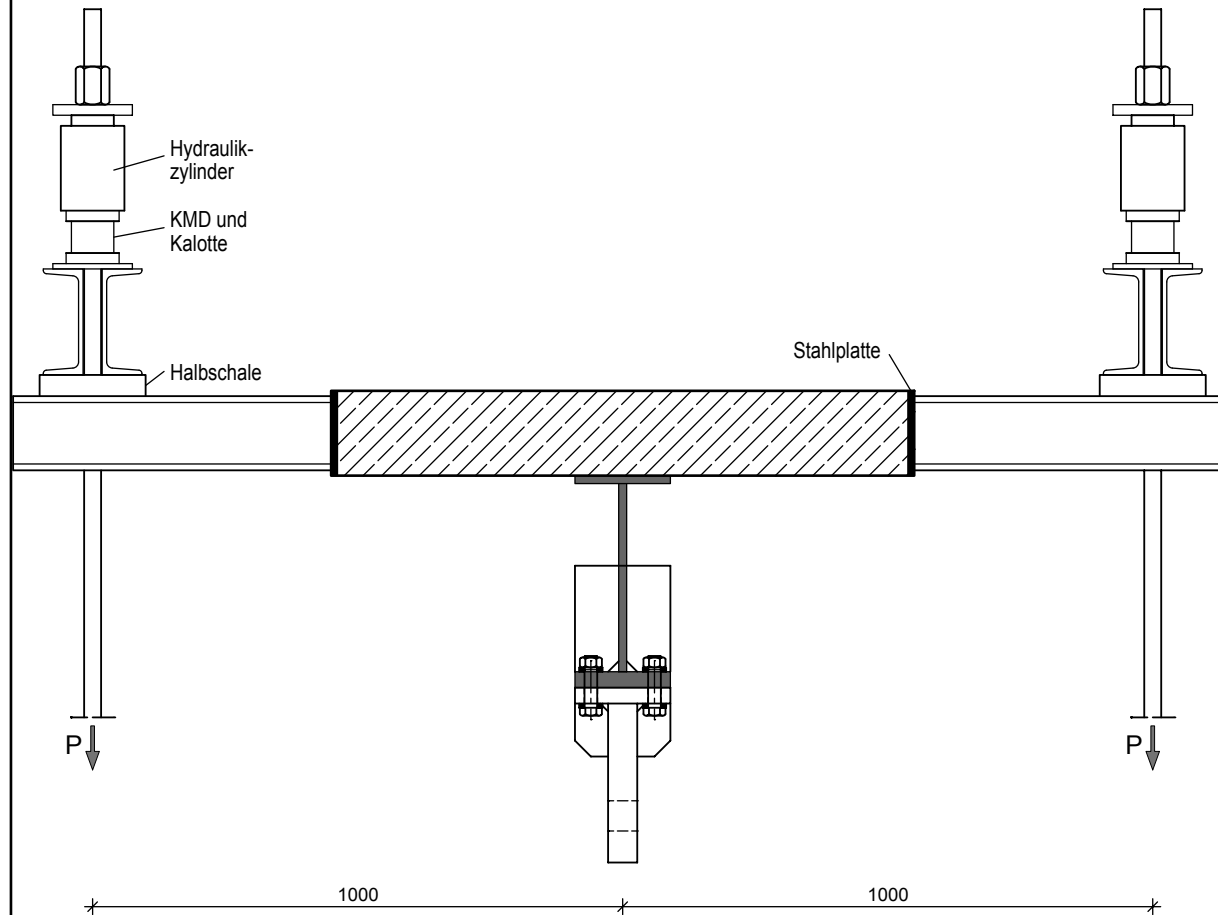


Ansicht



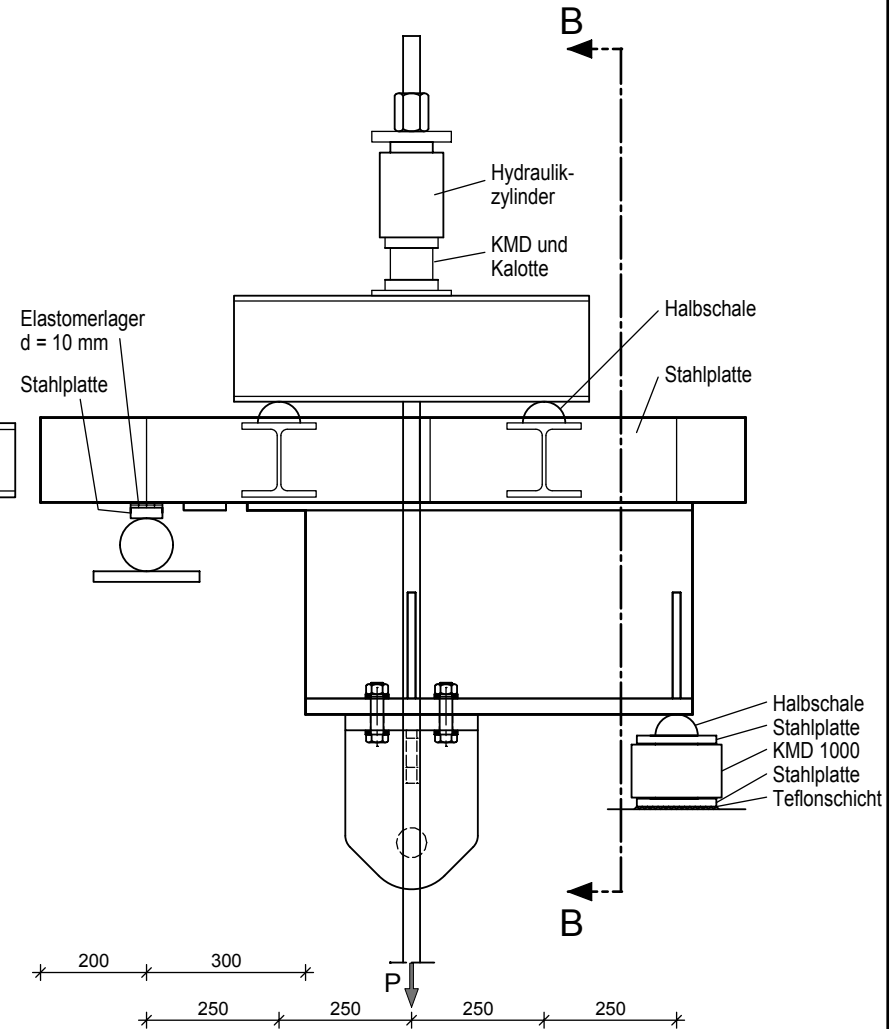
BAUHERR / OBJEKT		VERSUCH B2_P_D2_ka		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B2 Versuchskörper				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	74	07.07.2011	


Schnitt B-B



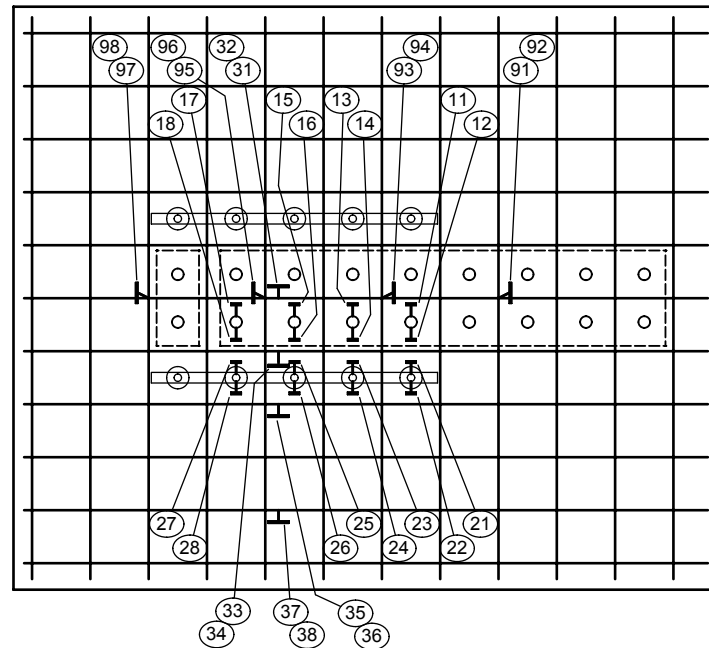
Kopfbolzendübel und Doppelkopfanker sind nicht dargestellt.

Ansicht

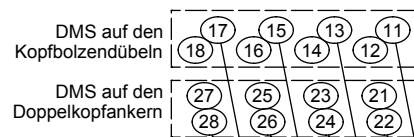
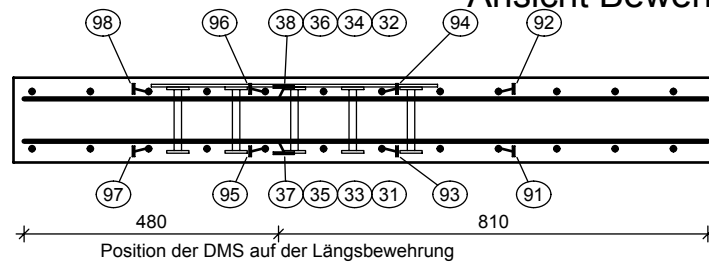


BAUHERR / OBJEKT			VERSUCHE B2_P_D1_Qb		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trbk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Versuchsaufbau					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	75	07.07.2011		

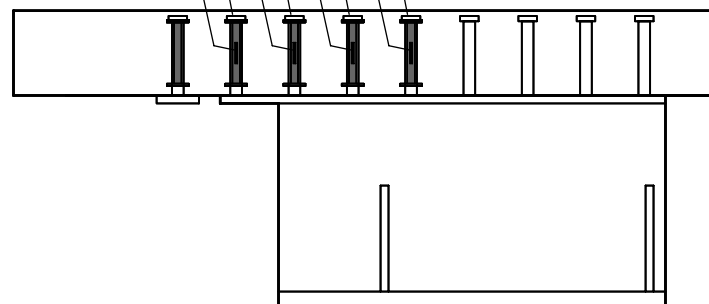
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

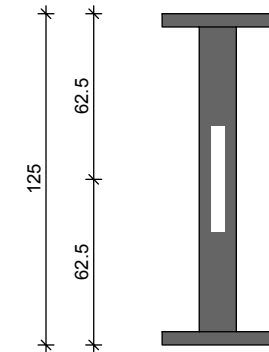
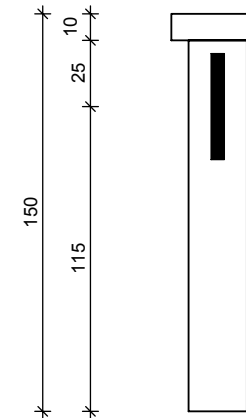


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



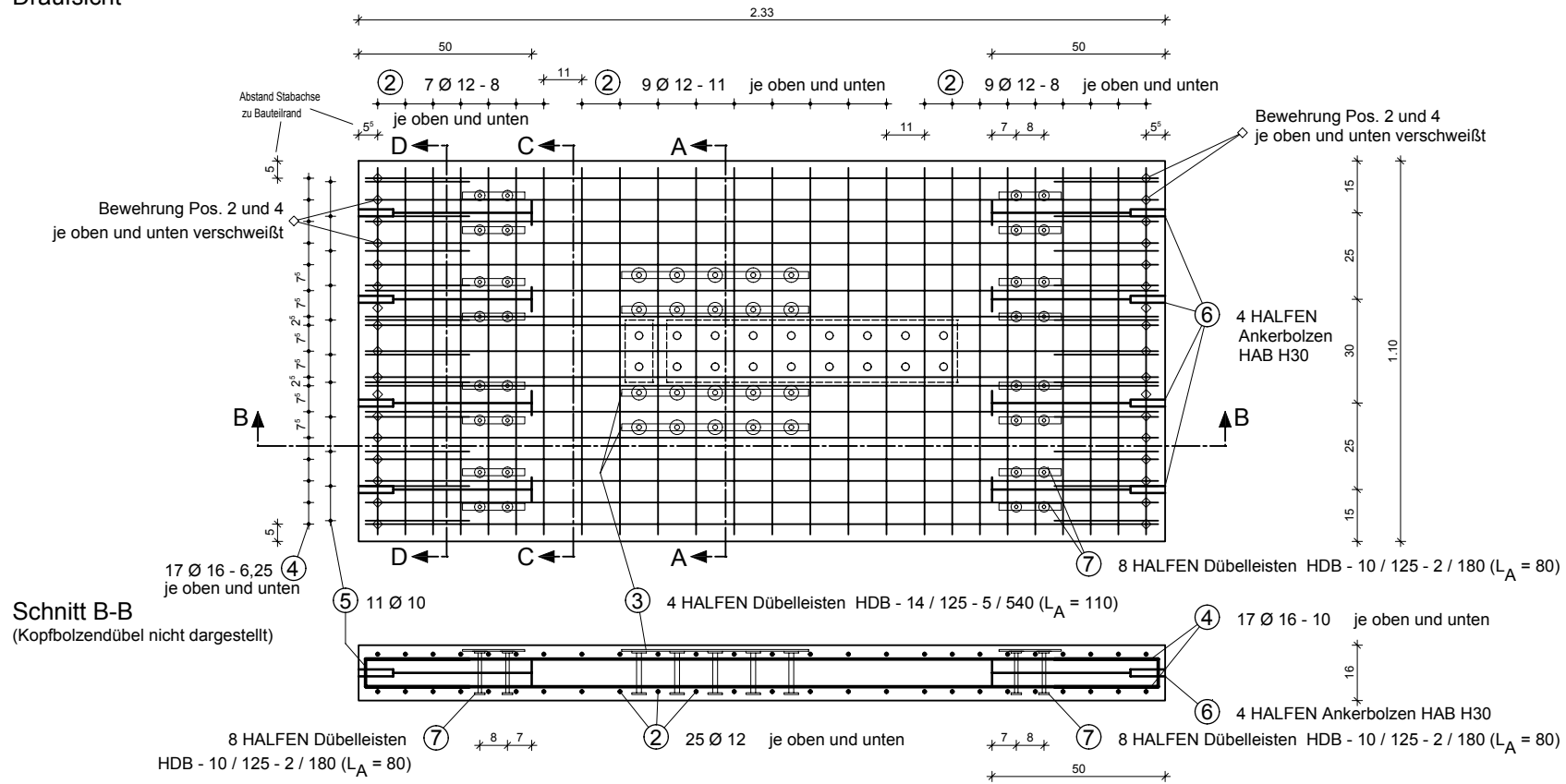
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnmessstreifen

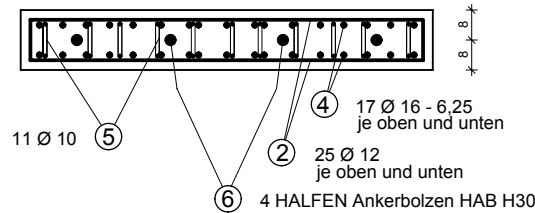
DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	91 - 98

BAUHERR / OBJEKT			VERSUCHE B2_P_D1_Qb		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	78	07.07.2011		

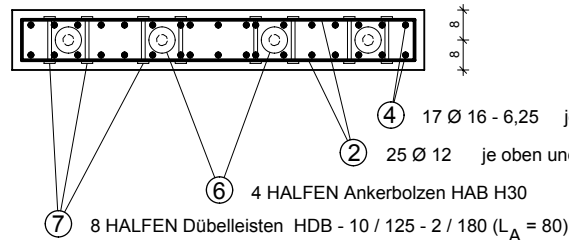
Draufsicht



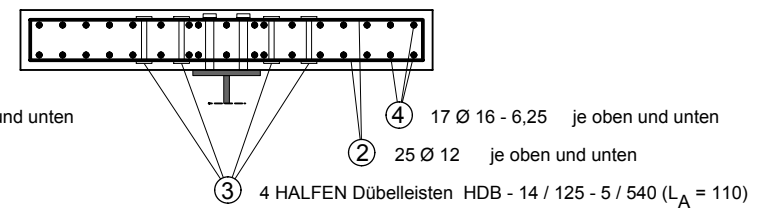
Schnitt D-D



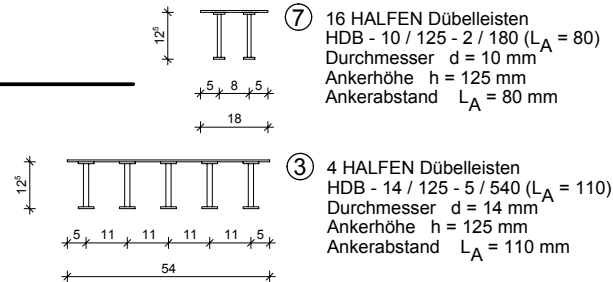
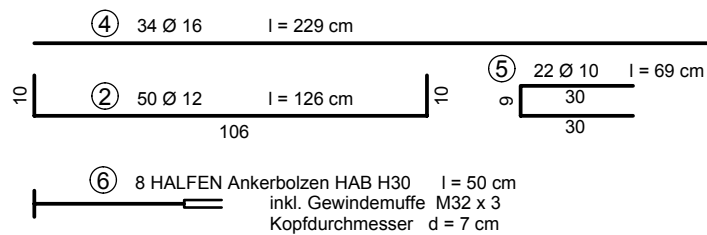
Schnitt C-C



Schnitt A-A




Stahlauszüge



Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

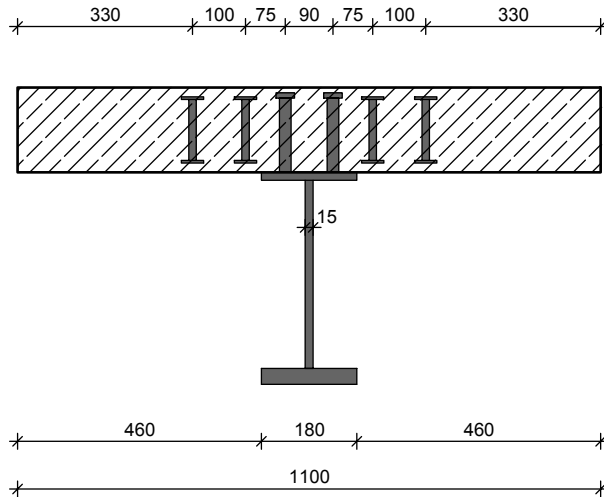
alle Maße in cm

BAUHERR / OBJEKT		VERSUCH		 <p>Technische Universität KAISERSLAUTERN</p> <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Damier-Strasse Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3655 cbschubert@mb.uni-kl.de www.mbs.uni-kl.de</p>
DFG - Verbundträger mit Dübelleisten		B1_N_D2_ka B2_N_D2_ka		
PLANINHALT				
B1/B2 Bewehrung				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	83	07.07.2011	

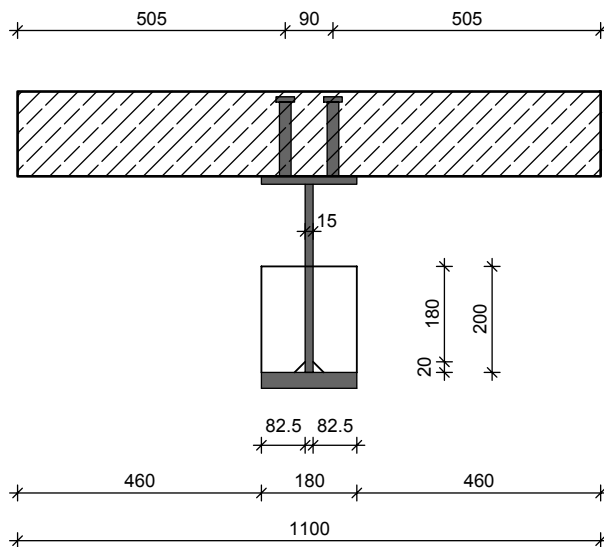
H/B = 420.0 / 594.0 (0.25m²)

Allplan 2006

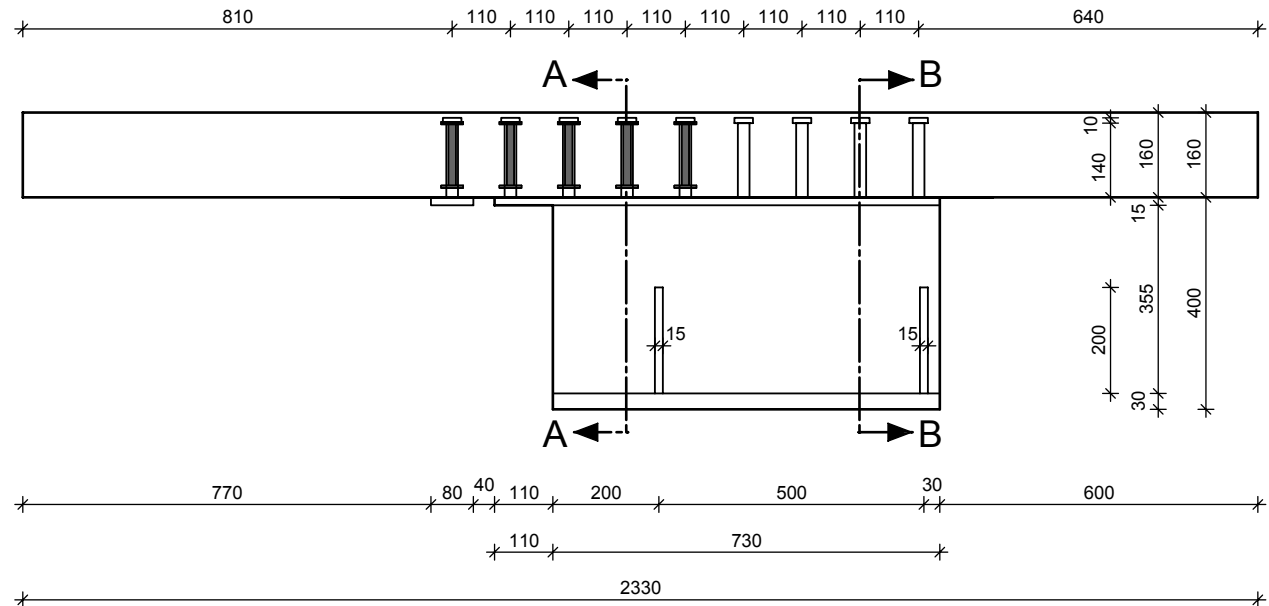
Schnitt A-A




Schnitt B-B

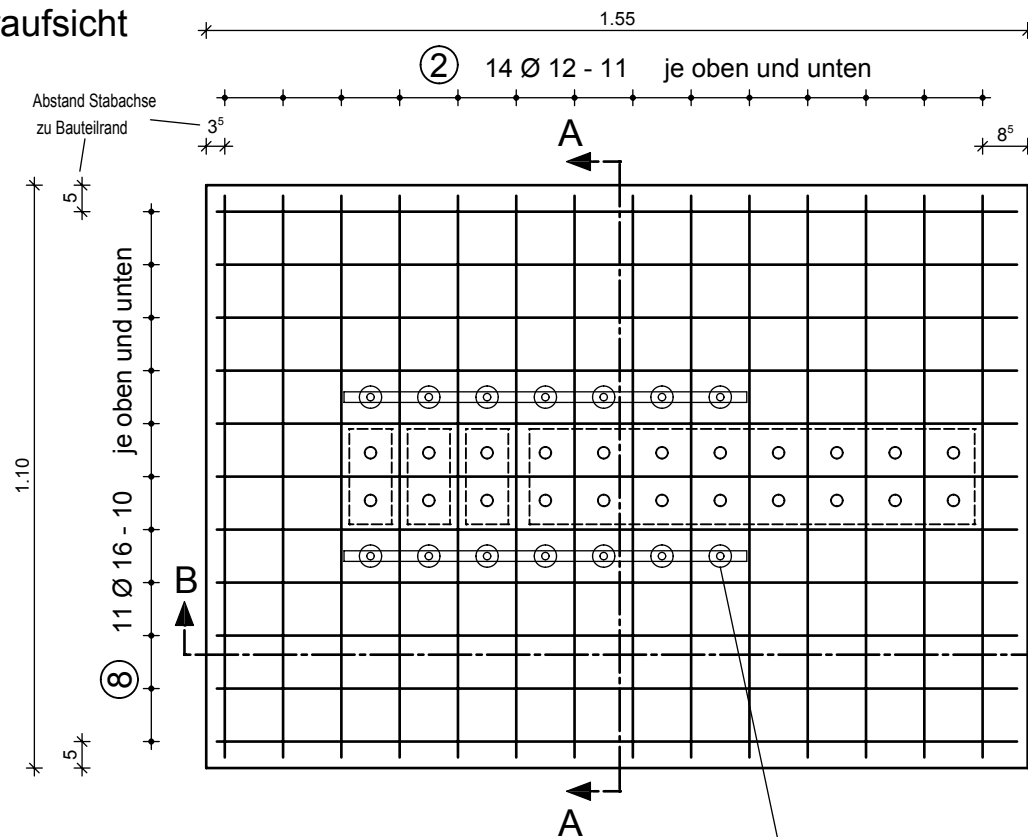


Ansicht

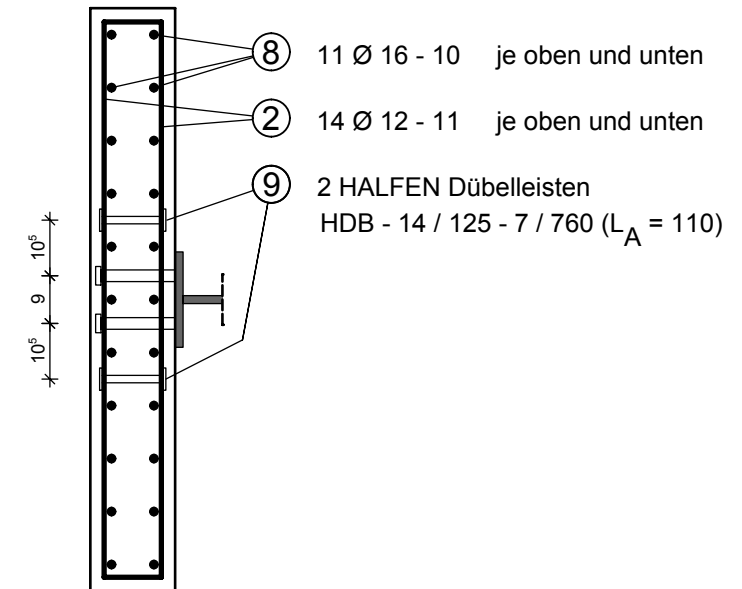


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DFG - Verbundträger mit Dübelleisten			B2_N_D2_ka		
PLANINHALT					
B2 Versuchskörper					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	84	07.07.2011		

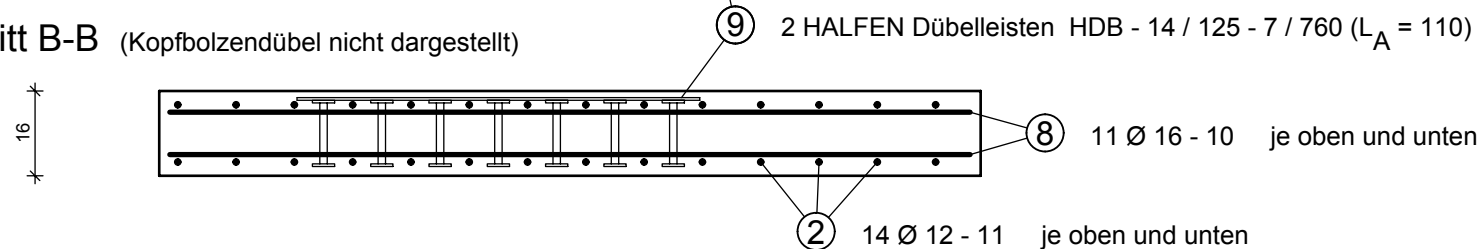
Draufsicht



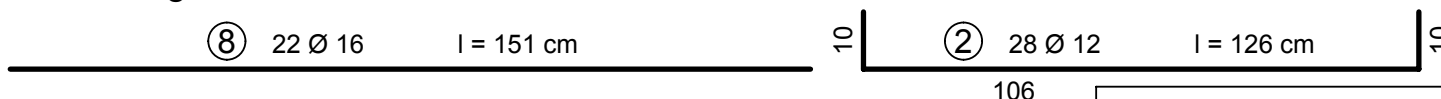
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

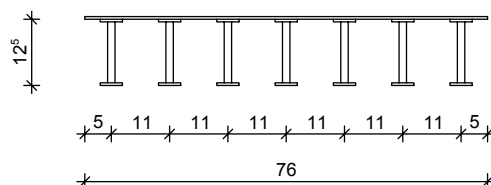


Stahlauszüge




Betondeckung: $c_{\text{nom}} = 2 \text{ cm}$
an jeder Stelle

alle Maße in cm



⑨ 2 HALFEN Dübelleisten
HDB - 14 / 125 - 7 / 760 ($L_A = 110$)
Durchmesser $d = 14 \text{ mm}$
Ankerhöhe $h = 125 \text{ mm}$
Ankerabstand $L_A = 110 \text{ mm}$

BAUHERR / OBJEKT			VERSUCHE B2_P_D1_gO		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rnhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	93	07.07.2011		

H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

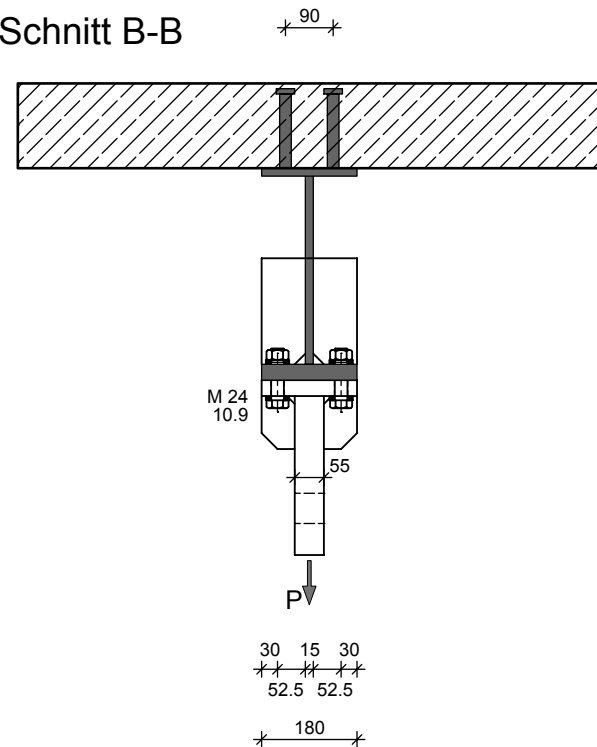
Technical drawing of a reinforced concrete slab with a central steel beam. The slab is 125 cm wide and 16 cm thick. The steel beam has a height of 15 cm. The slab is divided into four sections: two outer sections of 400 cm each and two inner sections of 105 cm each. The steel beam is 180 cm wide. The total width of the slab is 1100 cm. The total length of the slab is 160 cm.

Technical drawing of a mechanical assembly showing a cross-section of a beam with a central support and a vertical rod. The drawing includes the following dimensions:

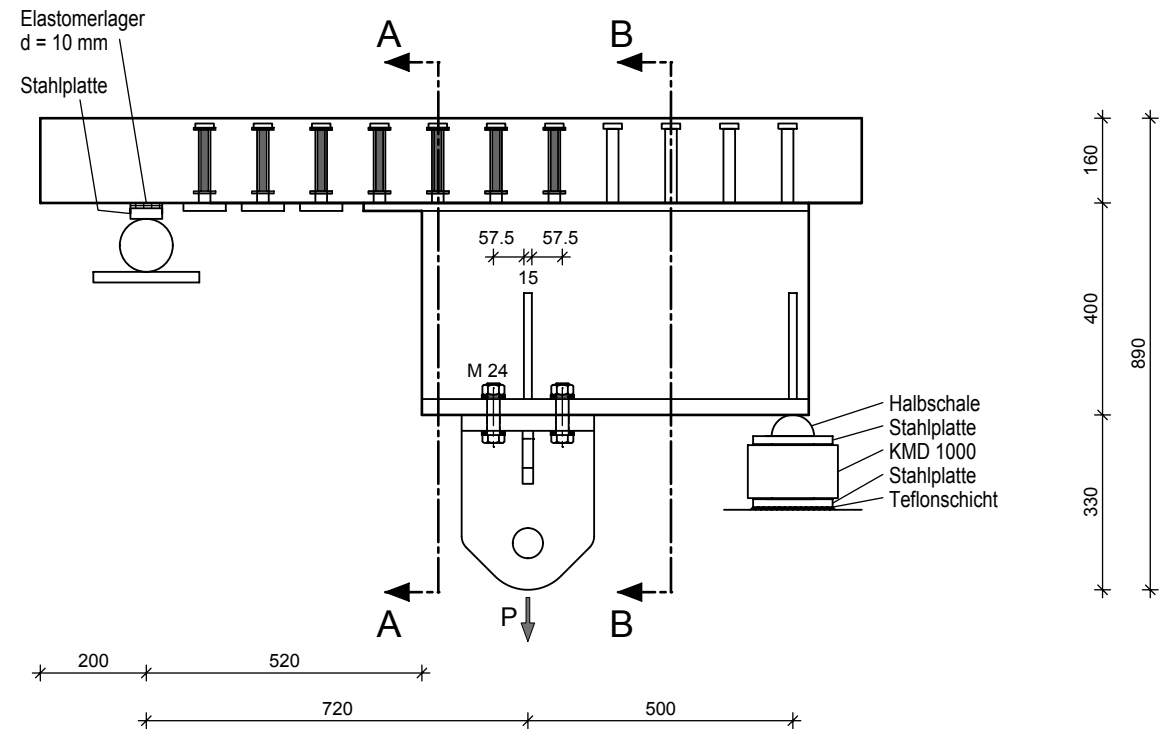
- Horizontal Dimensions (mm):**
 - Top: 505, 90, 505
 - Bottom: 460, 180, 460
 - Total width: 1100
 - Support width: 82.5, 82.5
- Vertical Dimensions (mm):**
 - Right side (from top): 10, 140, 15, 355, 400
 - Central rod: 20, 180, 200
 - Support height: 15


The drawing shows a cross-section of a bridge with a total width of 1550. The top reinforcement is divided into 10 groups with horizontal spacings of 310, 110, 110, 110, 110, 110, 110, 110, 110, and 140. The bottom reinforcement is divided into 10 groups with horizontal spacings of 270, 80, 30, 80, 30, 80, 40, 110, 200, and 100. The total width is 1550. The vertical dimensions are 10, 140, 15, 160, 200, 355, 160, and 400. The reinforcement groups are labeled A and B. The groups are numbered 1 to 10 from left to right. The groups 1 to 5 are labeled A and the groups 6 to 10 are labeled B. The groups 1 to 5 are shown with reinforcement details and the groups 6 to 10 are shown without.

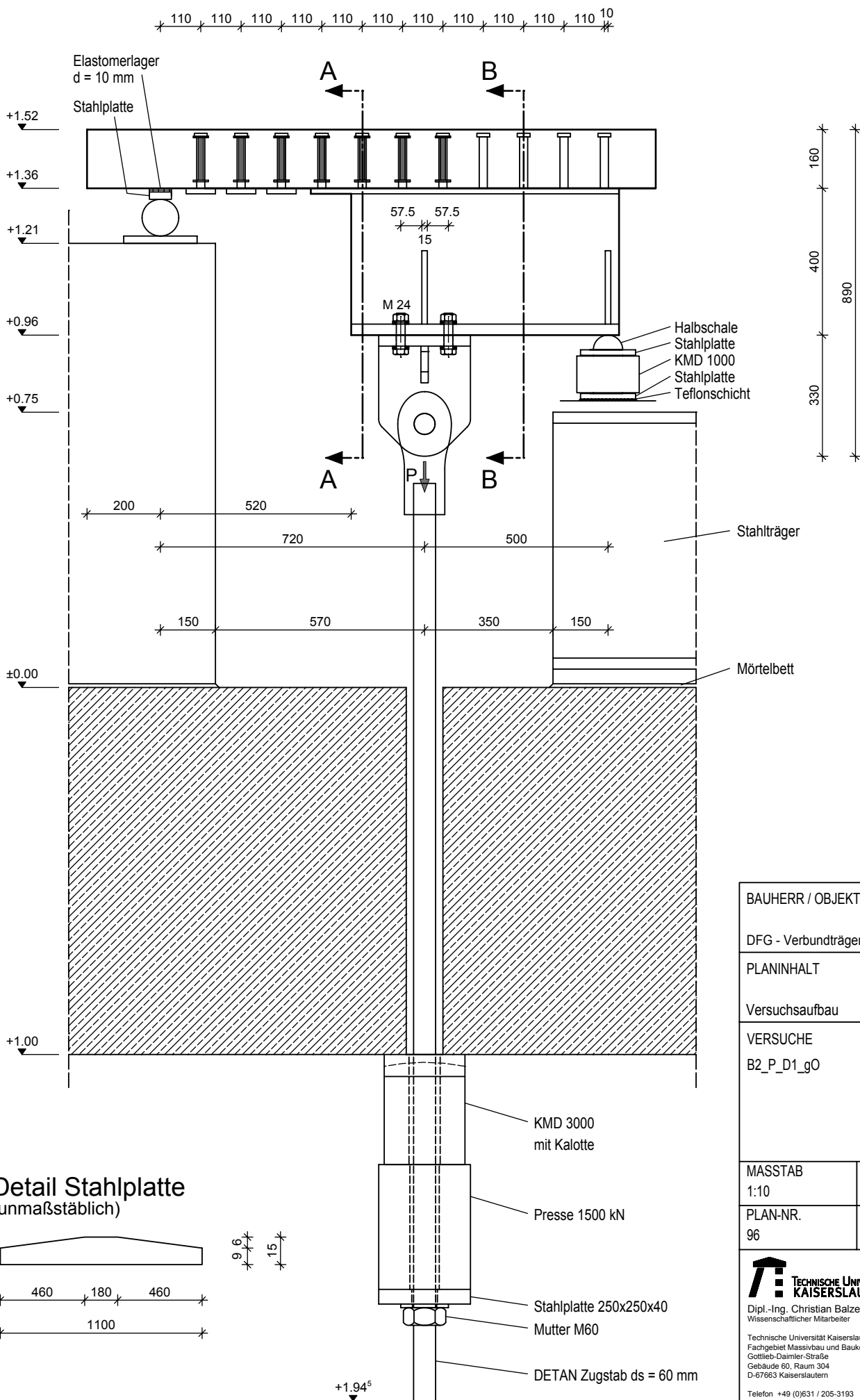
$$H/B = 297.0 / 420.0 \text{ (0.12m}^2\text{)}$$



90



BAUHERR / OBJEKT		VERSUCHE B2_P_D1_g0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@mrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B2 Versuchsaufbau				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	95	07.07.2011	



BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

Versuchsaufbau

VERSUCHE

B2_P_D1_gO

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

96

DATUM

07.07.2011



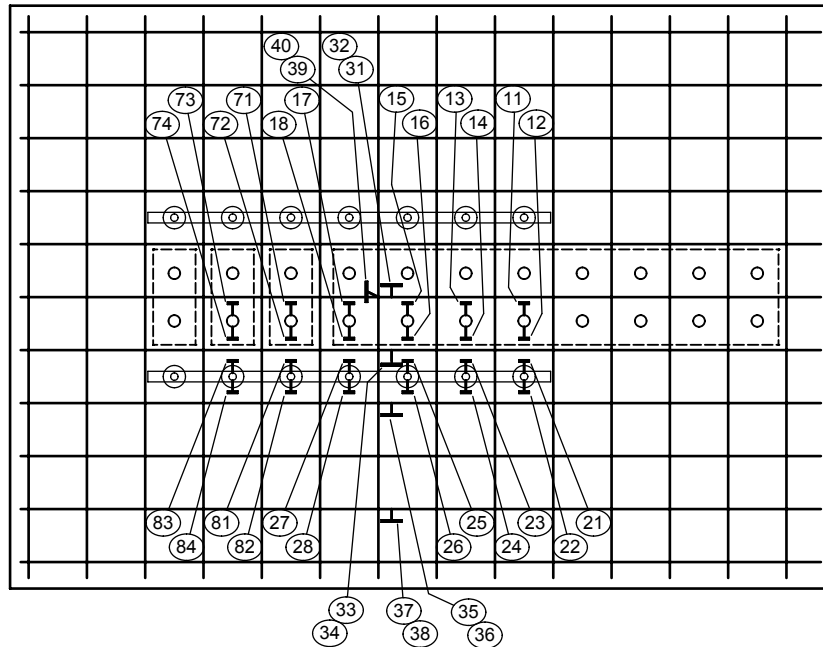
TECHNISCHE UNIVERSITÄT
KAISERSLAUTERN

Dipl.-Ing. Christian Balzer
Wissenschaftlicher Mitarbeiter

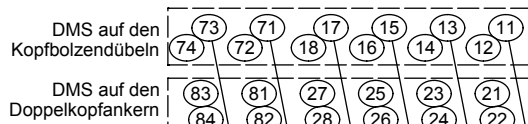
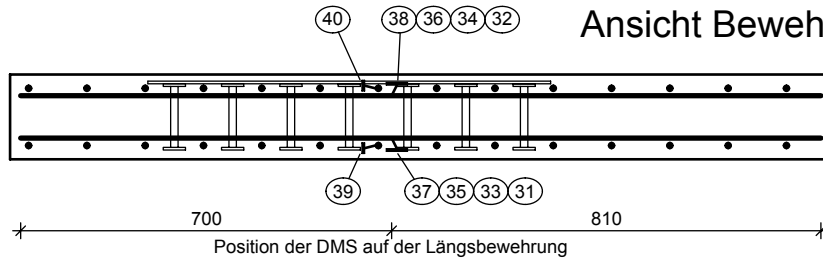
Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

Telefon +49 (0)631 / 205-3193
Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de

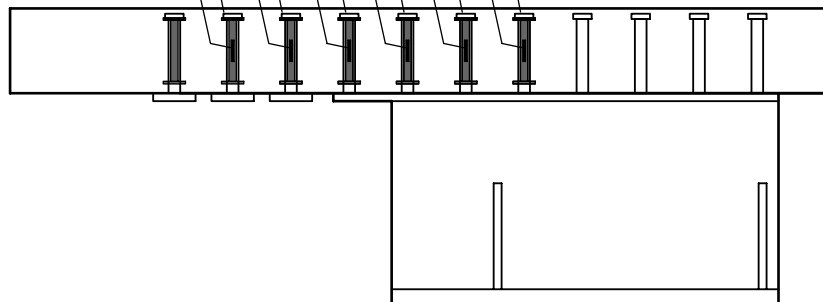
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

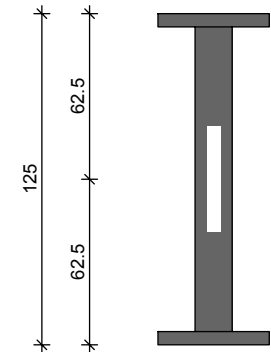
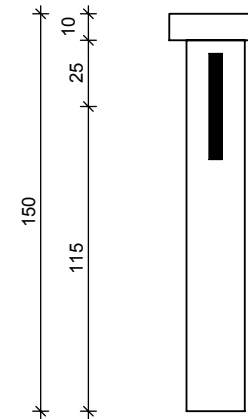


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkern werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

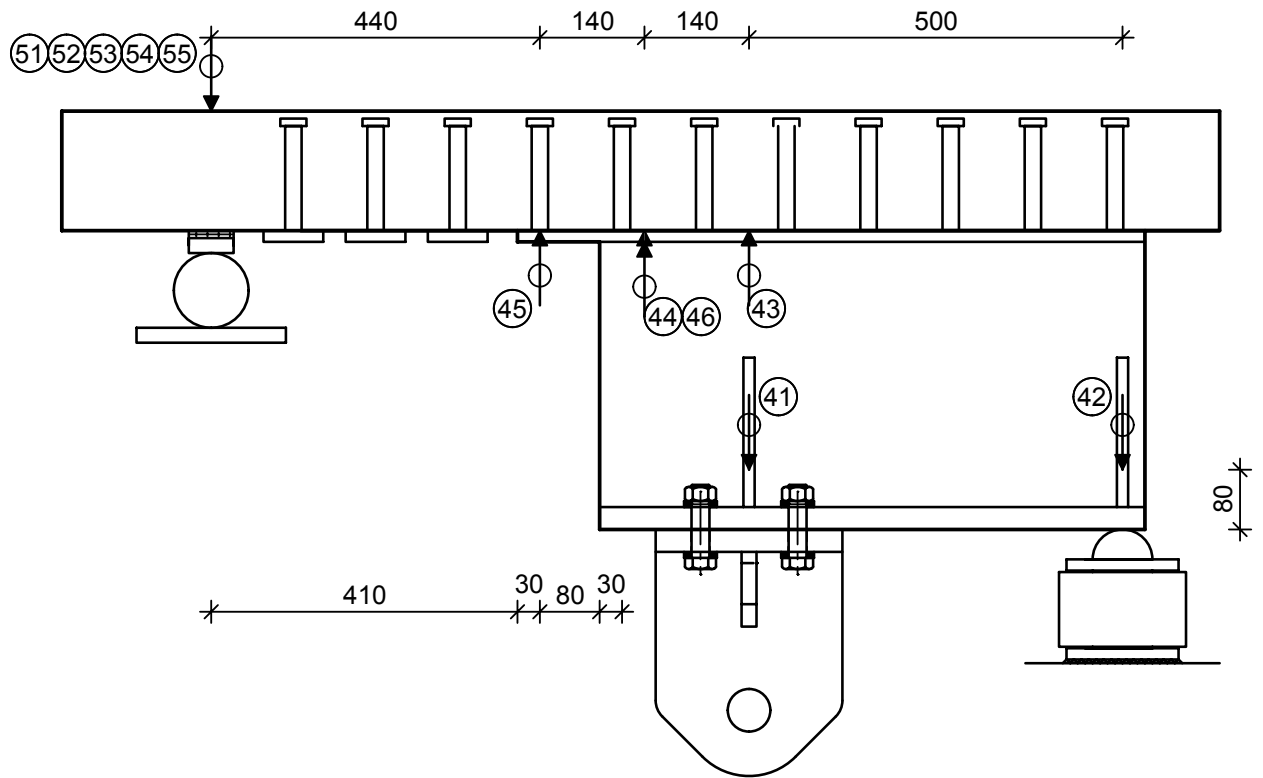
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 18 und 71 - 74
DMS auf Doppelkopfkern	21 - 28 und 81 - 84
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT			VERSUCHE B2_P_D1_gO		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B2 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	98	07.07.2011		

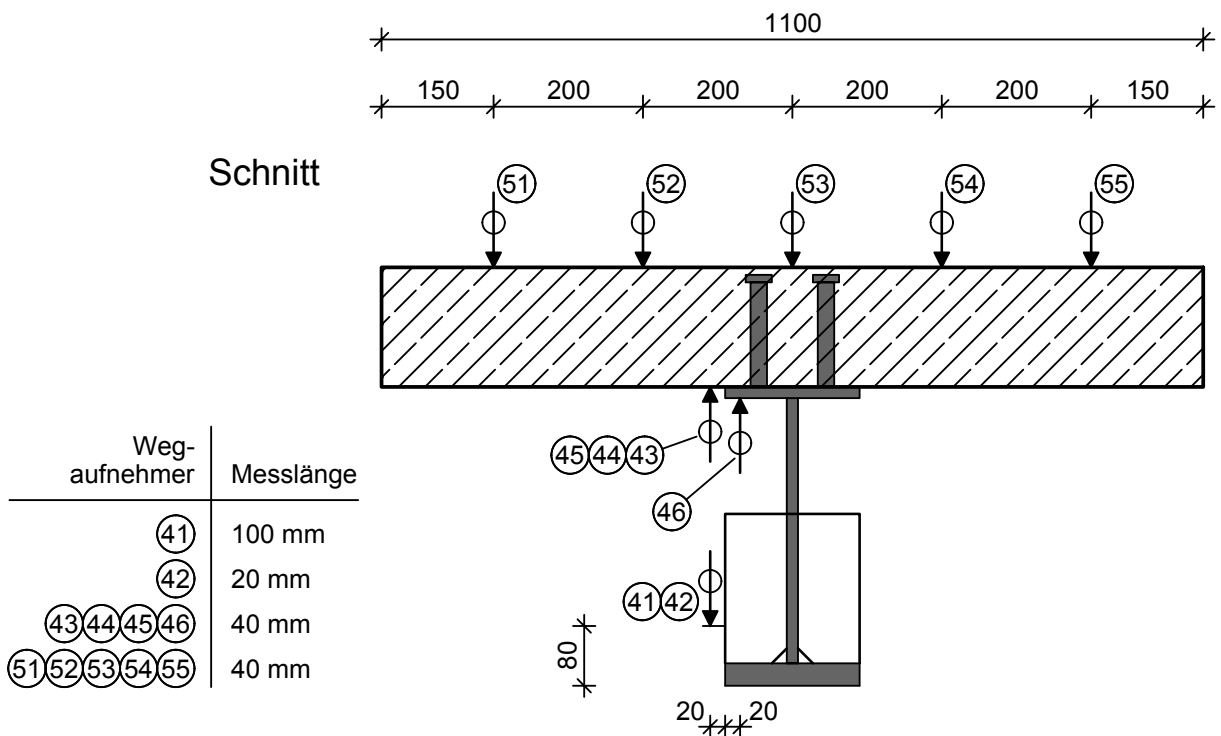
Ansicht

Anordnung Wegaufnehmer



Doppelkopfkanker sind nicht dargestellt.

Schnitt



Weg- aufnahme	Messlänge
(41)	100 mm
(42)	20 mm
(43)(44)(45)(46)	40 mm
(51)(52)(53)(54)(55)	40 mm

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B2 Messtechnik - Wegaufnehmer

VERSUCHE

B2_P_D1_g0

**TECHNISCHE UNIVERSITÄT
KAISERSLAUTERN**

Dipl.-Ing. Christian Balzer
Wissenschaftlicher Mitarbeiter

Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

Telefon +49 (0)631 / 205-3193
Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

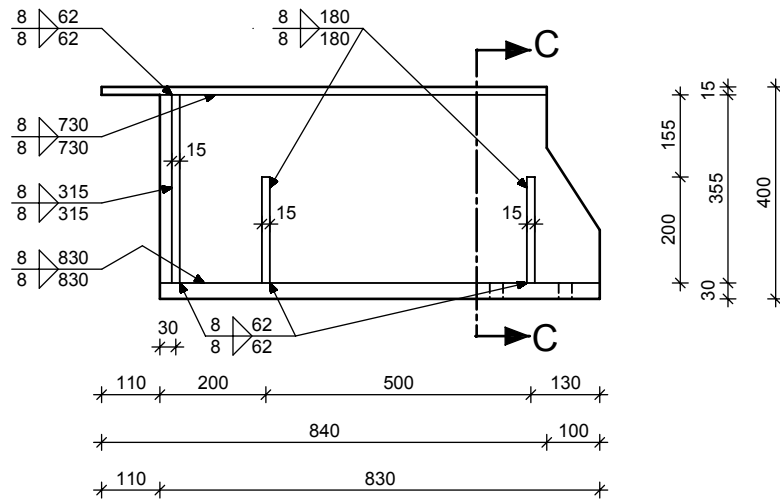
99

DATUM

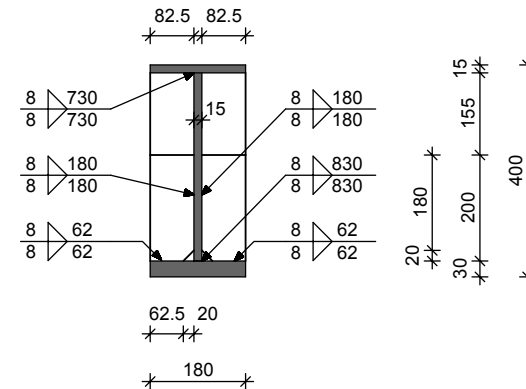
07.07.2011

Herstellung Stahlträger

Ansicht M 1:10

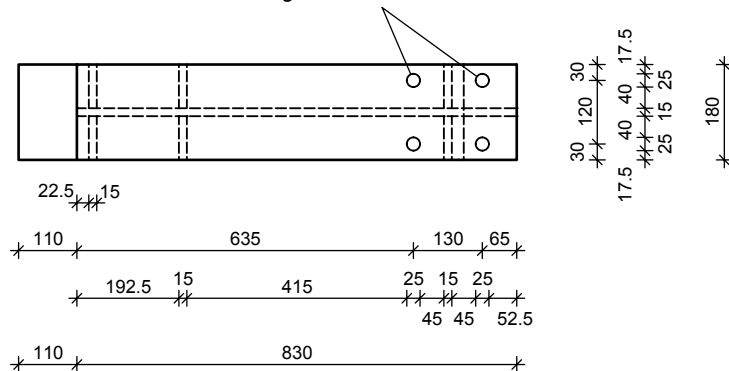


Schnitt M 1:10




Untersicht M 1:10

Bohrungen $\varnothing = 25$ mm

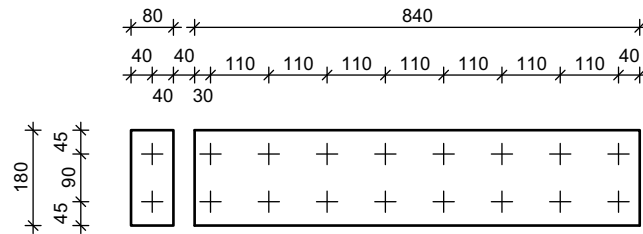


Material: S 235 JR

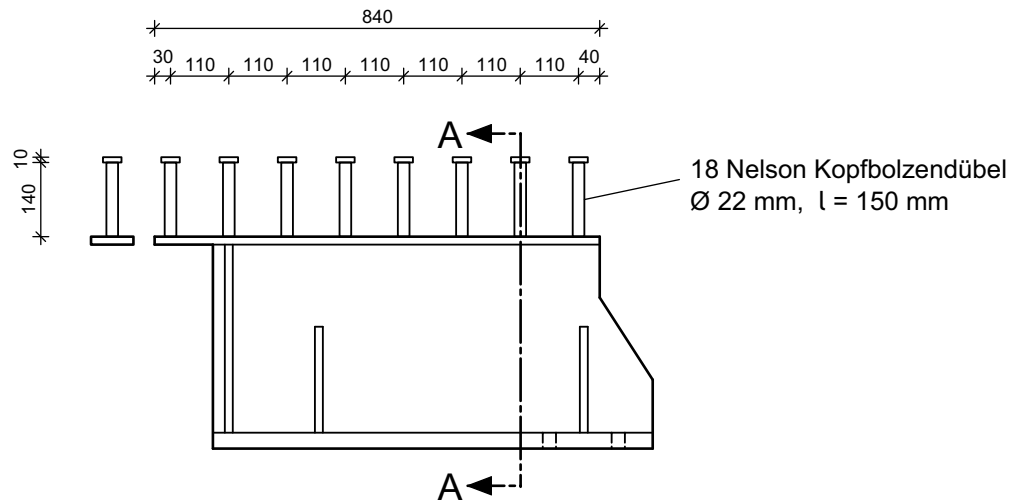
BAUHERR / OBJEKT		VERSUCHE		 <div>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</div> <div>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</div> <div>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</div> <div>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhtk.uni-kl.de www.massivbau-kl.de</div>
DFG - Verbundträger mit Dübelleisten		B1_P_D1 B1_P_D2_kA B1_O_D1 B1_N_D2_kA B1_N_D1 B1_P_D1_MV B1_P_D0 B1_P_D1_gO B1_P_D2 B1_P_D1_Qb B1_N_D2		
PLANINHALT				
B1 Herstellung Stahlträger				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	121	07.07.2011	

Anordnung der Kopfbolzendübel

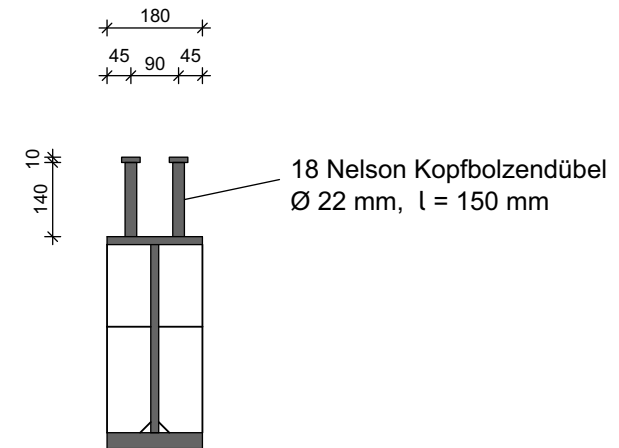
Draufsicht M 1:10




Ansicht M 1:10

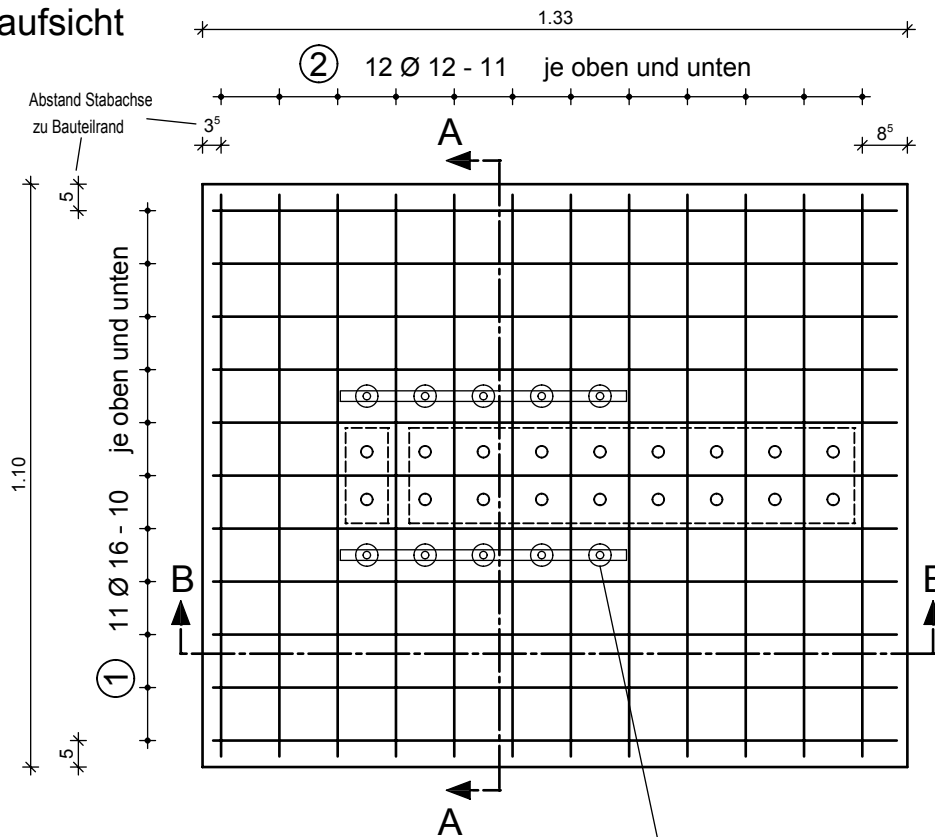


Schnitt A-A M 1:10

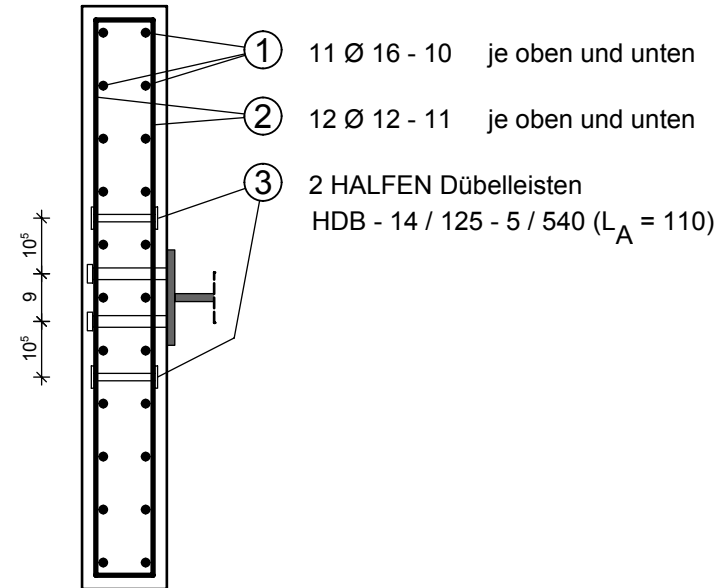


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DFG - Verbundträger mit Dübelleisten			B1_P_D1	B1_P_D2_kA	
PLANINHALT			B1_O_D1	B1_N_D2_kA	
B1 Anordnung der Kopfbolzendübel			B1_N_D1	B1_P_D1_MV	
MASSTAB			B1_P_D0	B1_P_D1_gO	
1:10	PROJEKT-NR.	PLAN-NR.	B1_P_D2	B1_P_D1_St	
	SCHN 771/4-1	122	B1_N_D2	B1_P_D1_Qb	
DATUM					
07.07.2011					

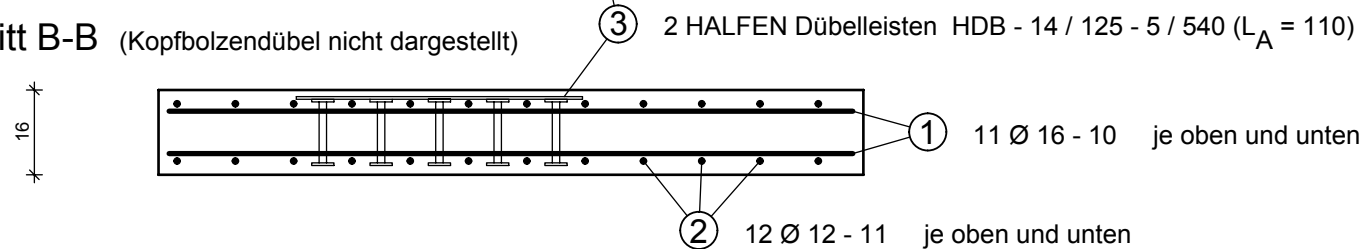
Draufsicht



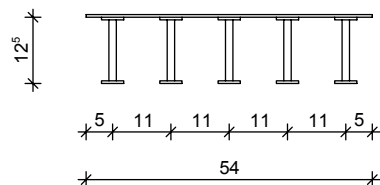
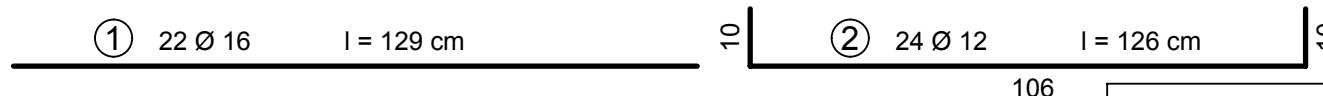
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)



Stahlauszüge



3 2 HALFEN Dübelleisten HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14$ mm
Ankerhöhe $h = 125$ mm
Ankerabstand $L_A = 110$ mm

Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

alle Maße in cm

BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelleisten		B1_P_D1 B1_O_D1 B1_P_D1_MV B1_P_D1_St	
PLANINHALT			
B1 Bewehrung			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:10	SCHN 771/4-1	123	07.07.2011

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Technical drawing of a reinforced concrete beam with a central vertical reinforcement cage. The drawing includes dimensions for the beam's length (400, 105, 90, 105, 400), width (125), and height (160). The reinforcement cage has a central vertical bar with a diameter of 15, and horizontal bars at the top and bottom. The beam is shown in cross-section with diagonal hatching.

Technical drawing of a mechanical assembly showing a cross-section of a base plate, a central vertical rod, and a rectangular block. Dimensions are provided in millimeters.

Horizontal Dimensions:

- Top: 505 (left section), 90 (central section), 505 (right section).
- Bottom: 460 (left section), 180 (central section), 460 (right section).
- Total width: 1100.

Vertical Dimensions:

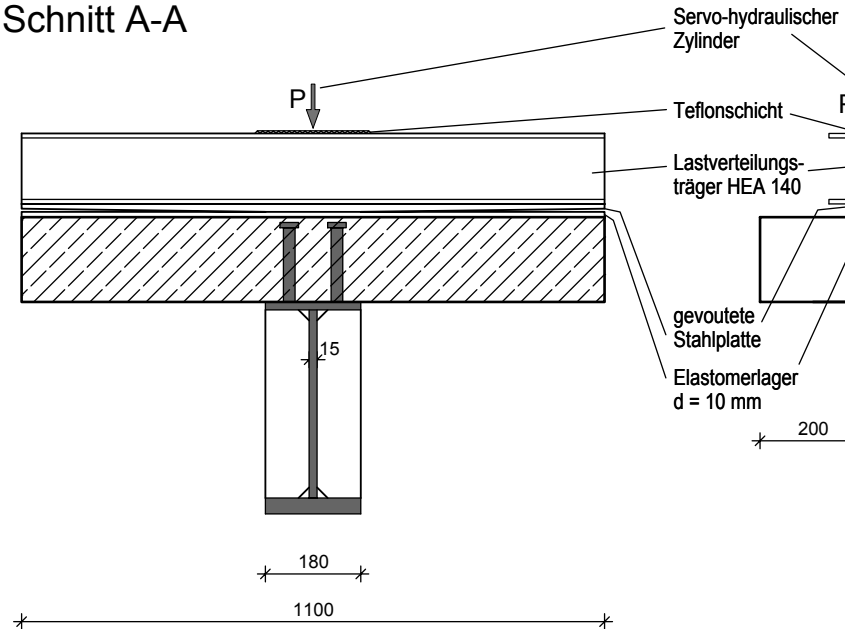
- Right side (from top to bottom): 10, 140, 15, 355, 400.
- Central rod section: 15 (top section), 180 (middle section), 20 (bottom section).

Other Dimensions:

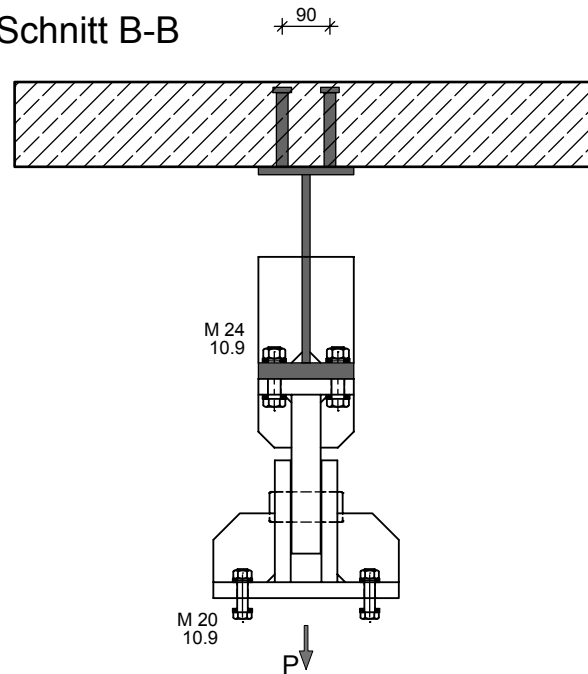
- Central rod diameter: 82.5 (indicated twice).

$$H/B = 297.0 / 420.0 \text{ (0.12m}^2\text{)}$$

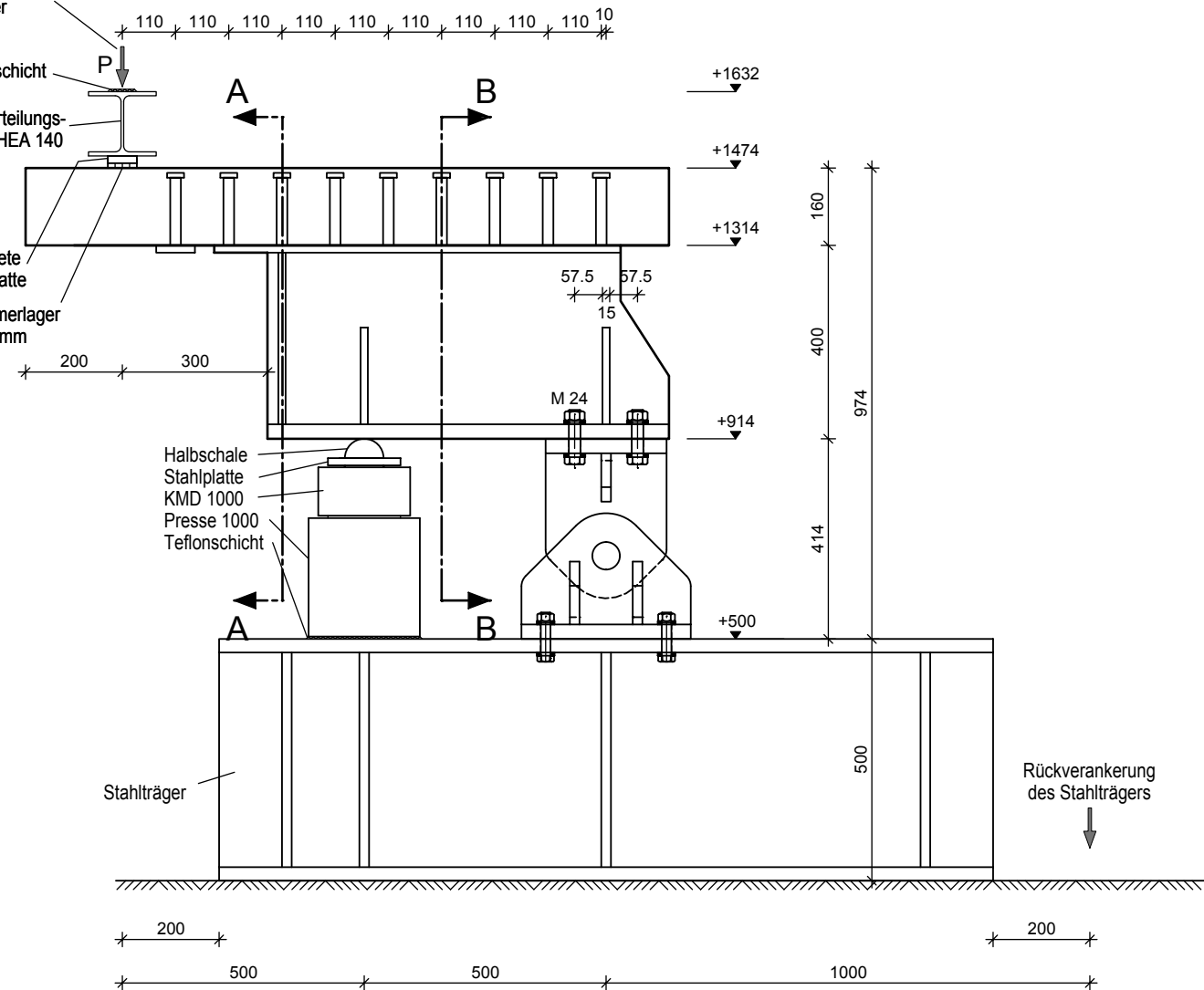
Schnitt A-A



Schnitt B-B

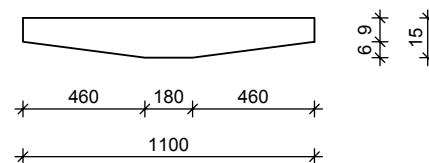


Ansicht



Doppelkopffanker sind nicht dargestellt.

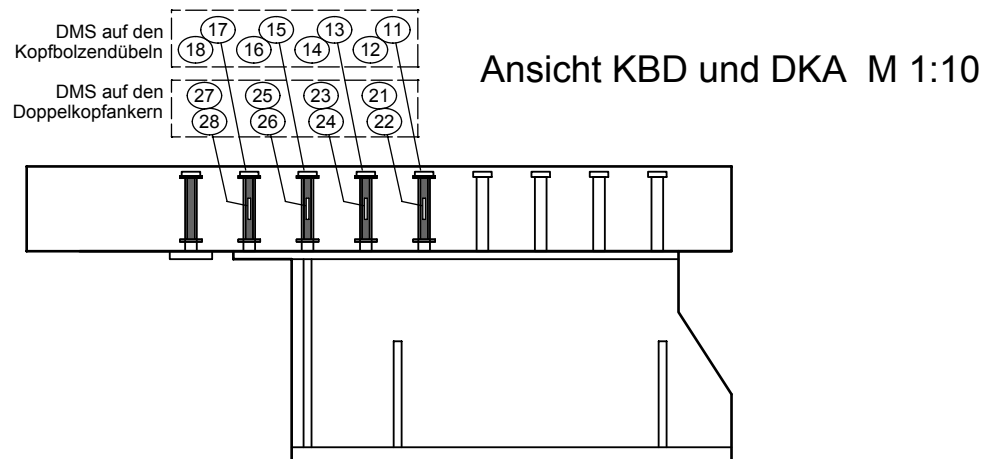
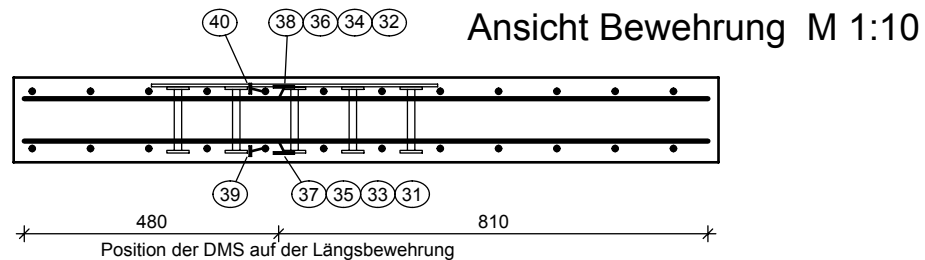
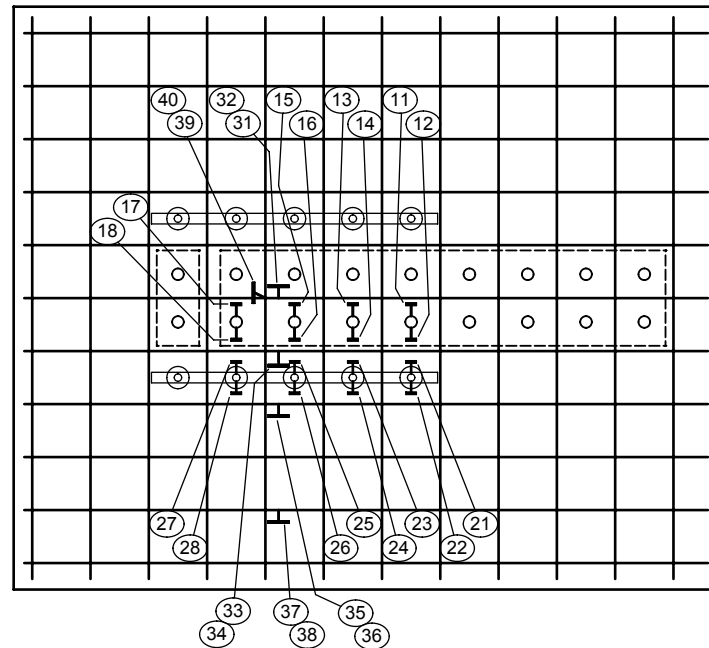
Detail gevoutete Stahlplatte (unmaßstäblich)



BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelleisten		B1_P_D1	B1_P_D1_MV
PLANINHALT		B1_O_D1	B1_P_D0
B1 Versuchsaufbau			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:10	SCHN 771/4-1	125	07.07.2011

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Draufsicht M 1:10

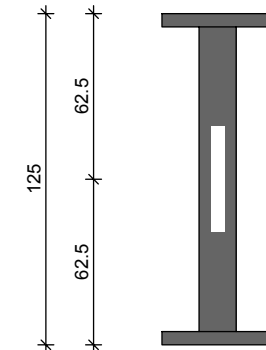
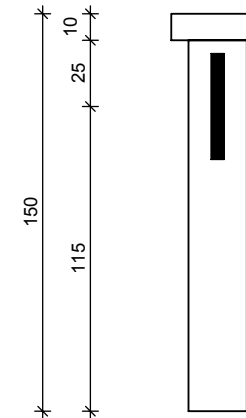


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

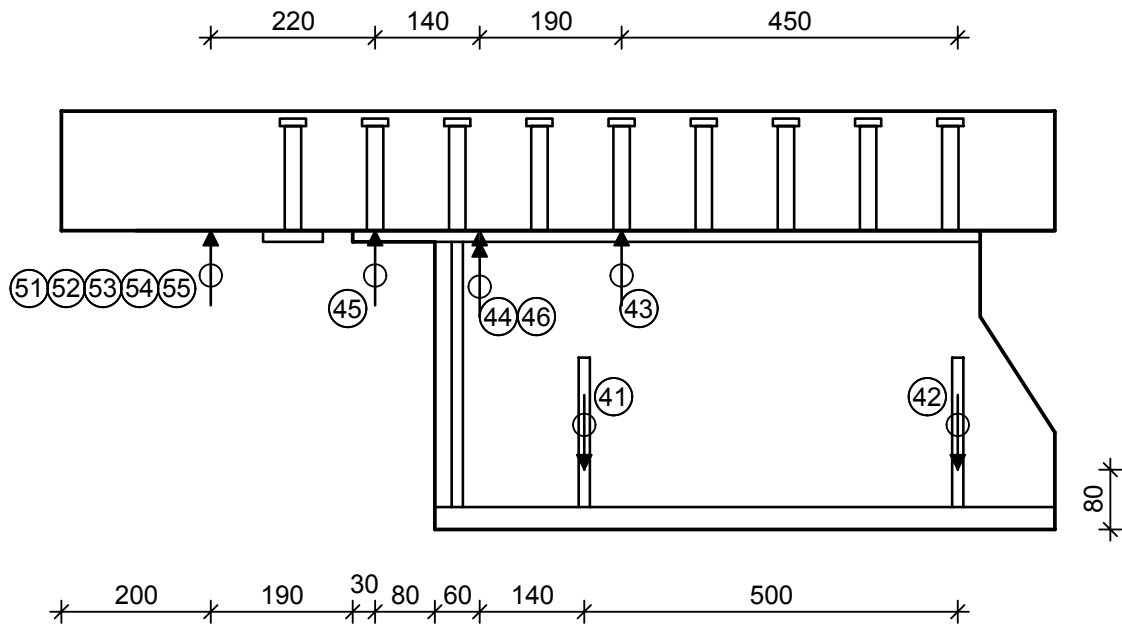
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 18
DMS auf Doppelkopfkankern	21 - 28
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

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DFG - Verbundträger mit Dübelleisten			B1_P_D1 B1_P_D1_MV B1_0_D1		
PLANINHALT					
B1 Messtechnik - DMS					
MASSTAB 1:2, 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 128	DATUM 07.07.2011		

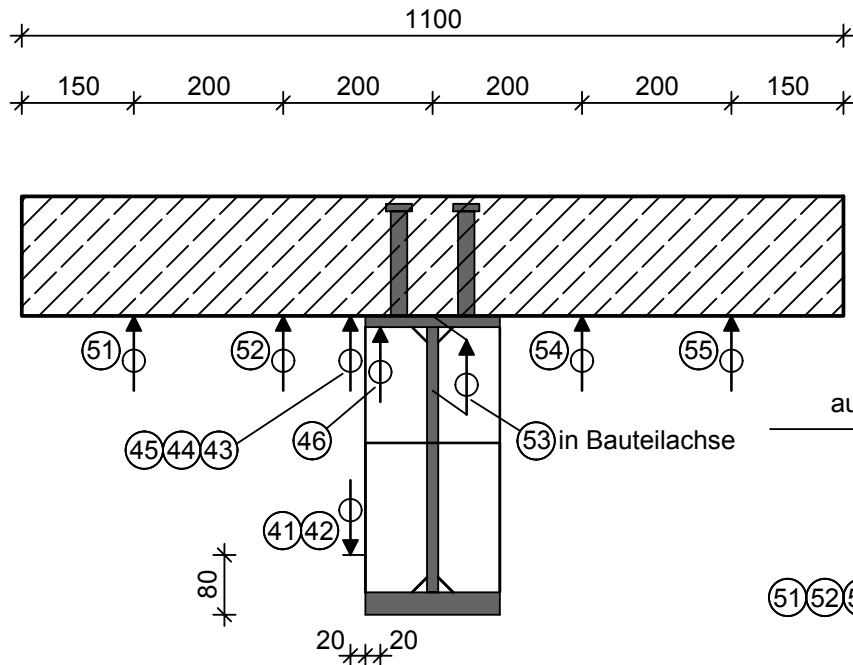
Ansicht

Anordnung Wegaufnehmer



Doppelkopfkanker sind nicht dargestellt.

Schnitt



Weg- aufnehmer	Messlänge
41, 42	10 mm
43, 46	20 mm
44, 45	40 mm
51, 52, 53, 54, 55	40 mm

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B1 Messtechnik - Wegaufnehmer

VERSUCHE

B1_P_D1 B1_P_D2_kA
 B1_0_D1 B1_N_D2_kA
 B1_N_D1 B1_P_D1_MV
 B1_P_D0 B1_P_D1_St
 B1_P_D2 B1_P_D1_Qb
 B1_N_D2



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MASSTAB

1:10

PROJEKT-NR.

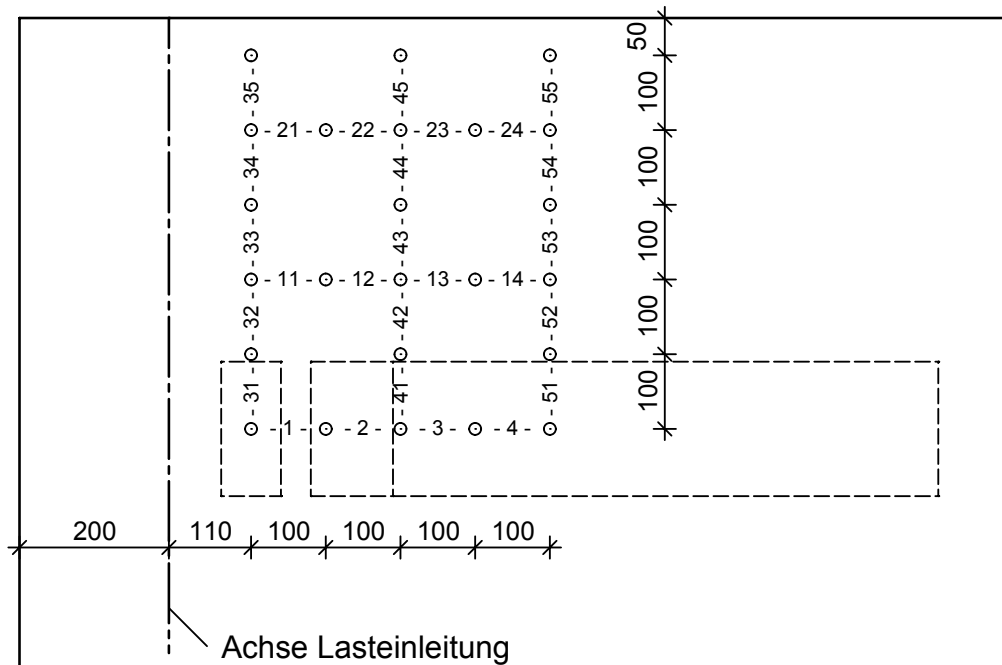
SCHN 771/4-1

PLAN-NR.

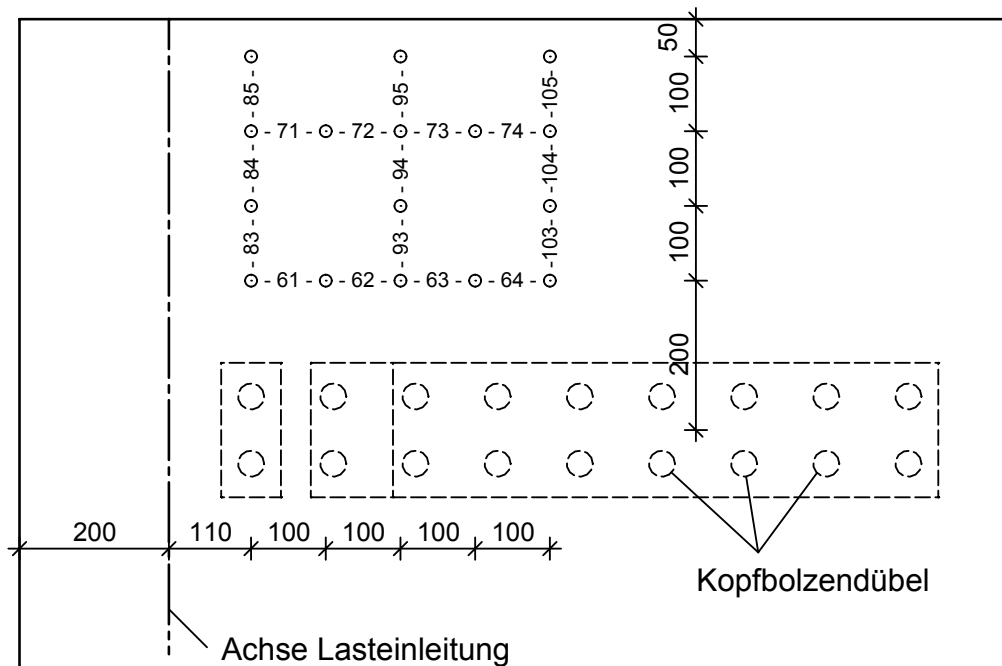
129

DATUM


07.07.2011



Setzdehnmesserpunkte Plattenoberseite

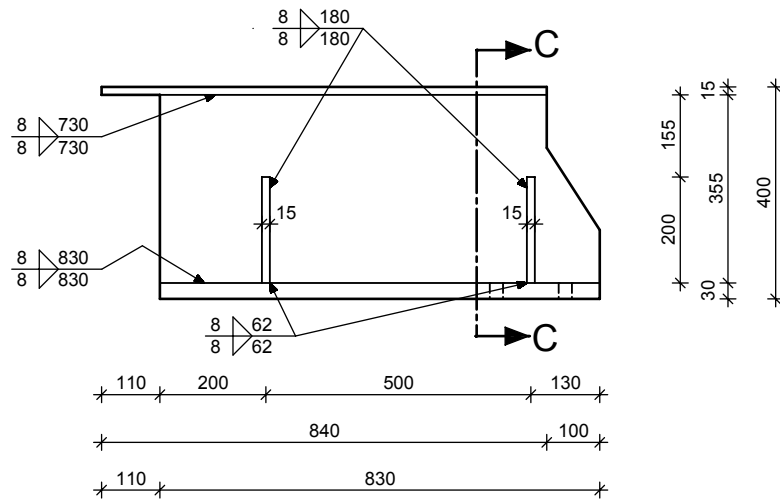


Setzdehnmesserpunkte Plattenunterseite

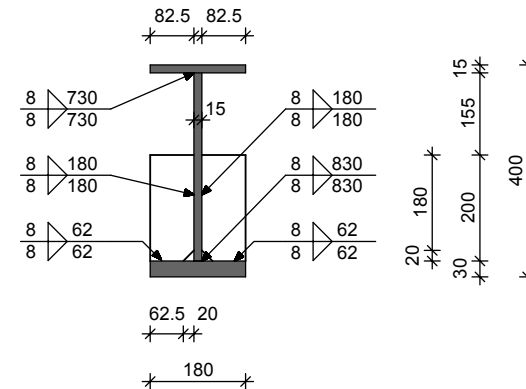
BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B1_P_D1 B1_P_D2_kA B1_O_D1 B1_N_D2_kA B1_N_D1 B1_P_D1_MV B1_P_D0 B1_P_D1_St B1_P_D2 B1_P_D1_Qb B1_N_D2		
PLANINHALT				
B1 Messtechnik - Setzdehnungsmesser				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	130	07.07.2011	

Herstellung Stahlträger

Ansicht M 1:10

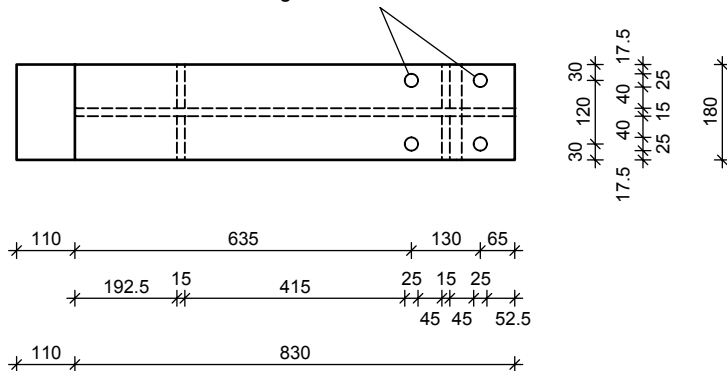


Schnitt M 1:10




Untersicht M 1:10

Bohrungen $\varnothing = 25$ mm



Material: S 235 JR

BAUHERR / OBJEKT			VERSUCHE B1_P_D1_St		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhtk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B1 Herstellung Stahlträger					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	131	07.07.2011		

Technical drawing showing the cross-section of a reinforced concrete slab and column. The slab is shown with diagonal hatching. The column is shown with a central vertical reinforcement bar labeled '15'. Dimensions are provided in millimeters (mm).

Horizontal Dimensions (mm):

- Slab width: 400
- Column width: 180
- Distance from slab edge to column center: 460
- Reinforcement spacing: 105, 105, 400
- Total width: 1100

Vertical Dimensions (mm):

- Slab thickness: 20
- Column height: 315
- Total height: 355
- Reinforcement diameter: 15

Technical drawing showing a cross-section of a mechanical assembly. The assembly consists of a base plate (hatched area) and a central vertical rod (15 mm diameter) passing through a rectangular block (20 mm thick). The base plate has a total width of 1100 mm, with a central section of 180 mm and two side sections of 460 mm each. The rectangular block has a total width of 1100 mm, with a central section of 180 mm and two side sections of 460 mm each. The base plate has a thickness of 20 mm. The rectangular block has a height of 180 mm. The central vertical rod has a diameter of 15 mm. The base plate has a central section of 180 mm and two side sections of 460 mm each. The rectangular block has a total width of 1100 mm, with a central section of 180 mm and two side sections of 460 mm each. The base plate has a thickness of 20 mm. The rectangular block has a height of 180 mm. The central vertical rod has a diameter of 15 mm.

Technical drawing of a reinforced concrete slab and beam cross-section. The drawing shows a slab with a width of 810 mm and a depth of 140 mm. The slab is supported by a beam with a width of 640 mm and a depth of 160 mm. The slab is reinforced with 8 bars (4 top, 4 bottom) and the beam is reinforced with 4 bars (2 top, 2 bottom). The drawing includes dimensions for the slab, beam, and reinforcement bars, as well as section lines A-A and B-B.

Allplan 2006

[illegible]

Ansicht

Servo-hydraulischer Zylinder

Teflonschicht

Lastverteilungs-träger HEA 140

gevoutete Stahlplatte

Elastomerlager $d = 10 \text{ mm}$

700

300

57.5

57.5

15

M 24

Halbschale

Stahlplatte

Stahlplatte KMD 3000

Teflonschicht

974

160

400

414

500

200

500

1000

200

Rückverankerung des Stahlträgers

+1632


+1474

+1314

+914

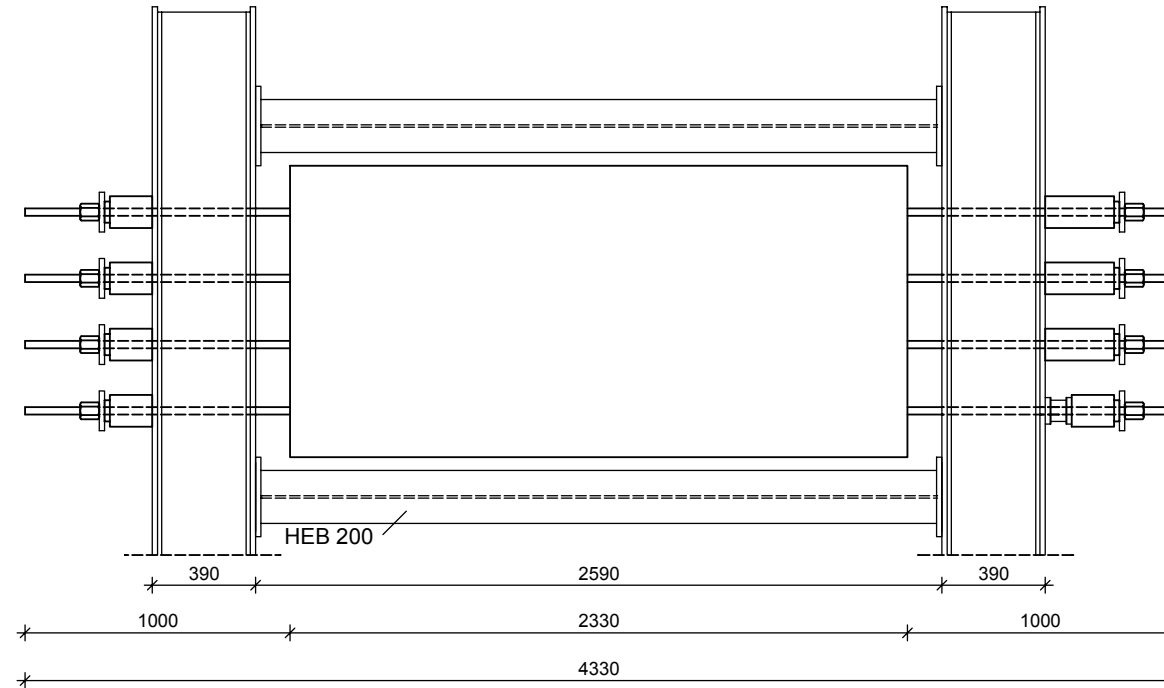
+500

Stahlträger

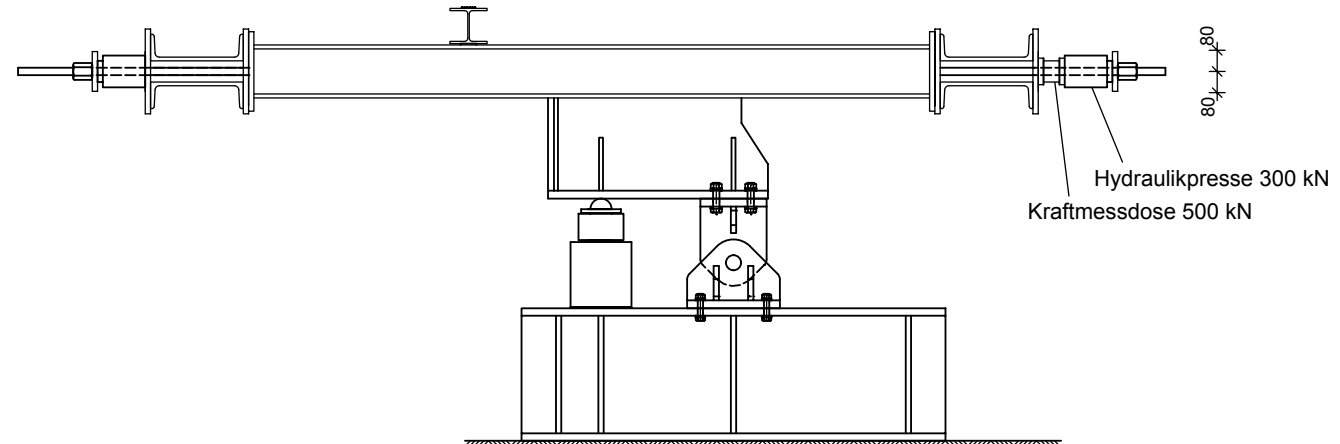
BAUHERR / OBJEKT		VERSUCHE B1_N_D1 B1_N_D2_ka B1_N_D2		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@chrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B1 Versuchsaufbau				
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 135	DATUM 07.07.2011	


Aufbringung der Zugkraft

Draufsicht



Ansicht

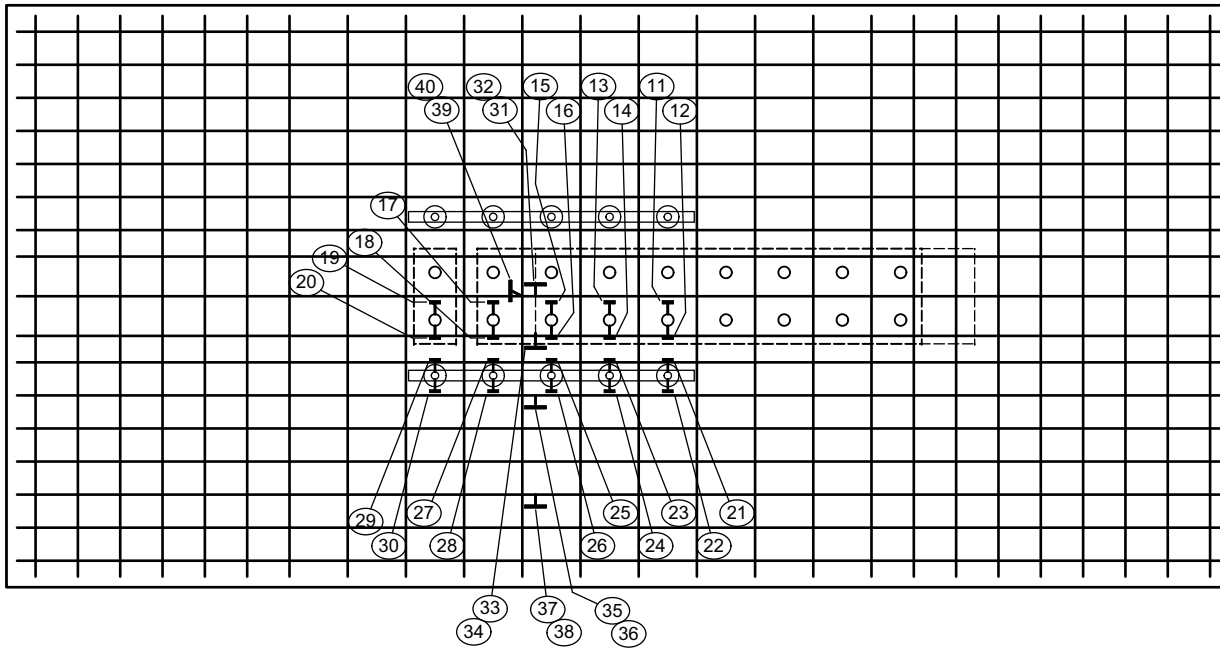


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DFG - Verbundträger mit Dübelleisten		B1_N_D1 B1_N_D2_ka B1_N_D2		
PLANINHALT		B1 Aufbringung Normalkraft		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:20	SCHN 771/4-1	137	07.07.2011	

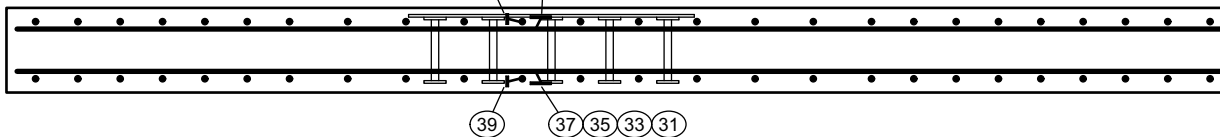
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

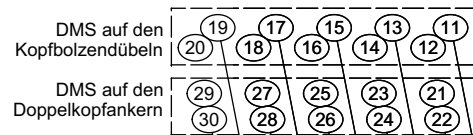
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

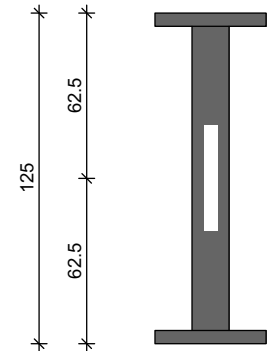
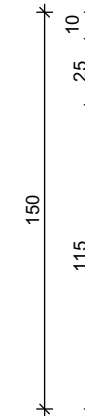


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.

Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

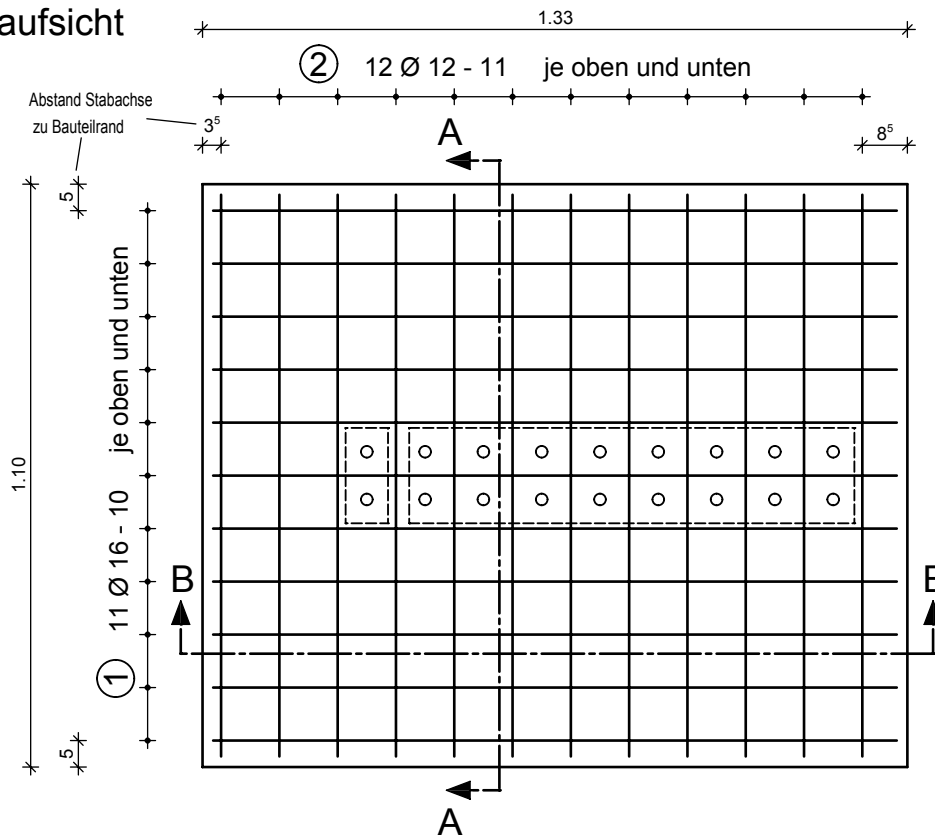
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkankern	21 - 30
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

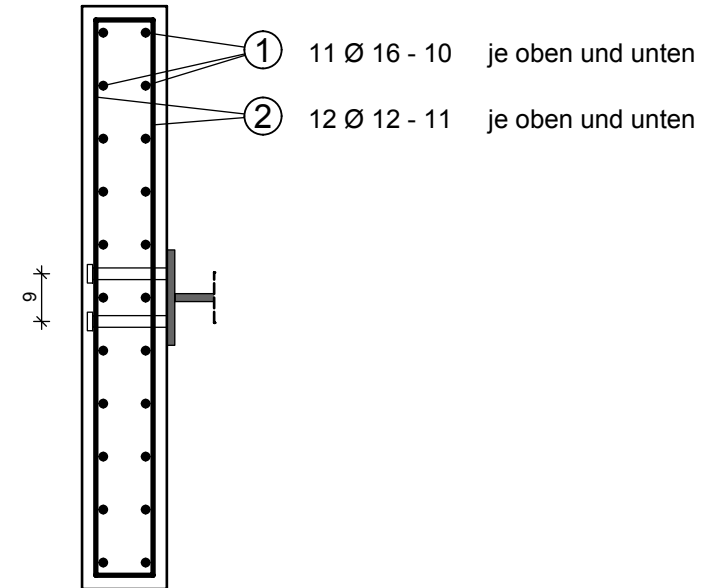
BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelnleisten		B1_N_D1	
PLANINHALT			
B1 Messtechnik - DMS			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:2, 1:10	SCHN 771/4-1	138	10.07.2011

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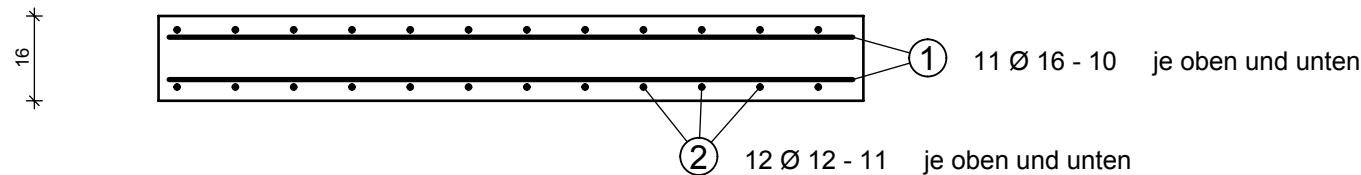
Draufsicht



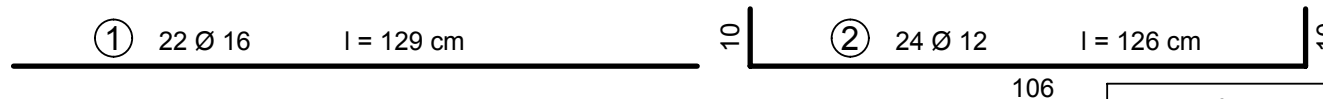
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)




Stahlauszüge

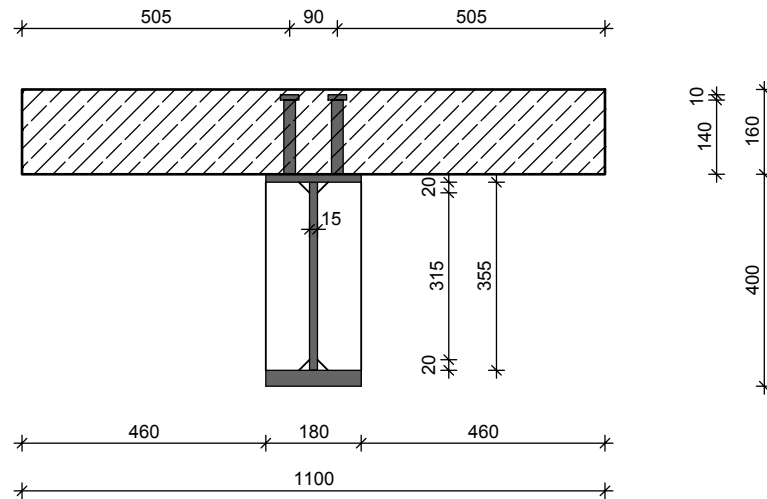


Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

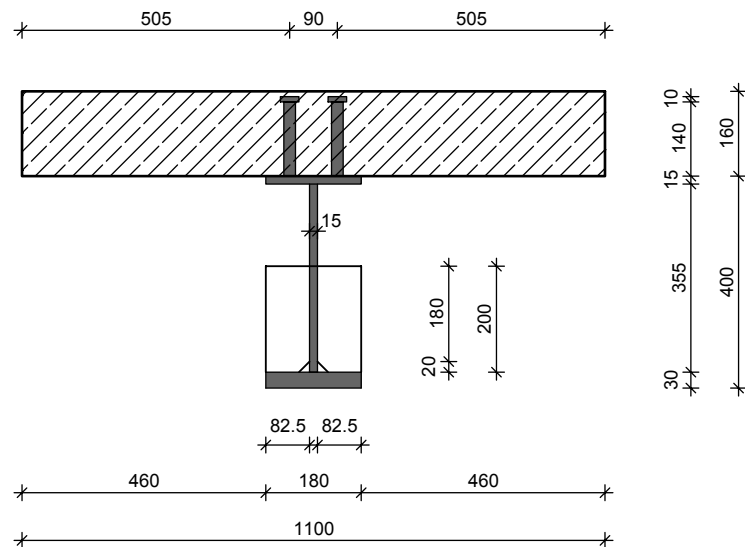
alle Maße in cm

BAUHERR / OBJEKT			VERSUCH B1_P_D0	 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B1 Bewehrung				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	143	07.07.2011	

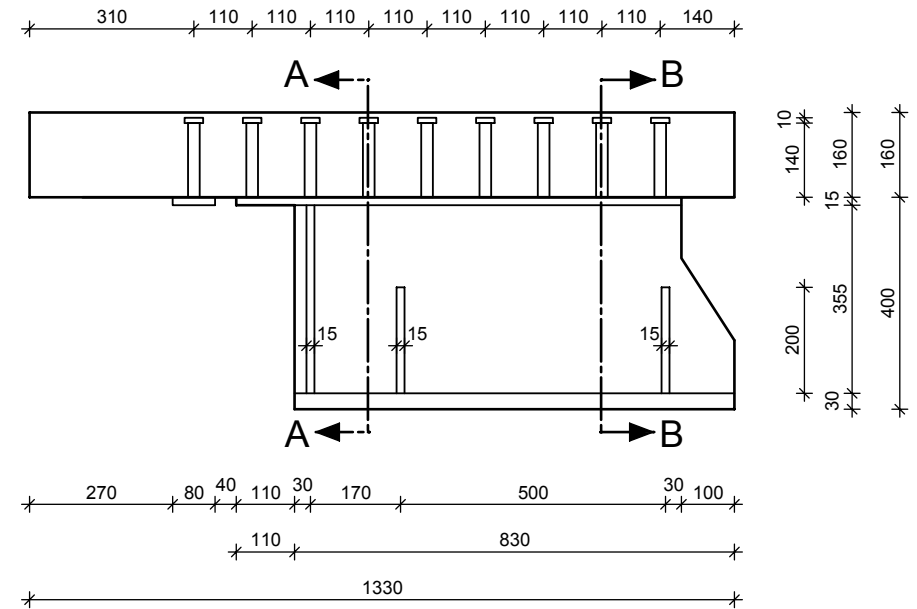
Schnitt A-A




Schnitt B-B



Ansicht



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DFG - Verbundträger mit Dübelleisten		B1_P_D0		
PLANINHALT				
B1 Versuchskörper				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	144	07.07.2011	

Schnitt A-A

The diagram shows a cross-section of a reinforced concrete slab and column. The slab is 180 mm wide and 1100 mm deep. It contains two vertical reinforcement bars with a diameter of 15 mm. A downward load P is applied to the top surface. The column is shown below the slab, and the reinforcement bars extend into it. The slab is shown with a hatched pattern, and the column is shown with a solid pattern.

Schnitt B-B

90

M 24
10.9

M 20
10.9

P

Ansicht

Servo-hydraulischer Zylinder

Teflonschicht

Lastverteilungs-träger HEA 140

gevoutete Stahlplatte

Elastomerlager $d = 10 \text{ mm}$

Halbschale

Stahlplatte

Stahlplatte

KMD 3000

Teflonschicht

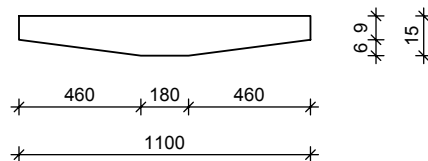
Stahlträger

Rückverankerung des Stahlträgers

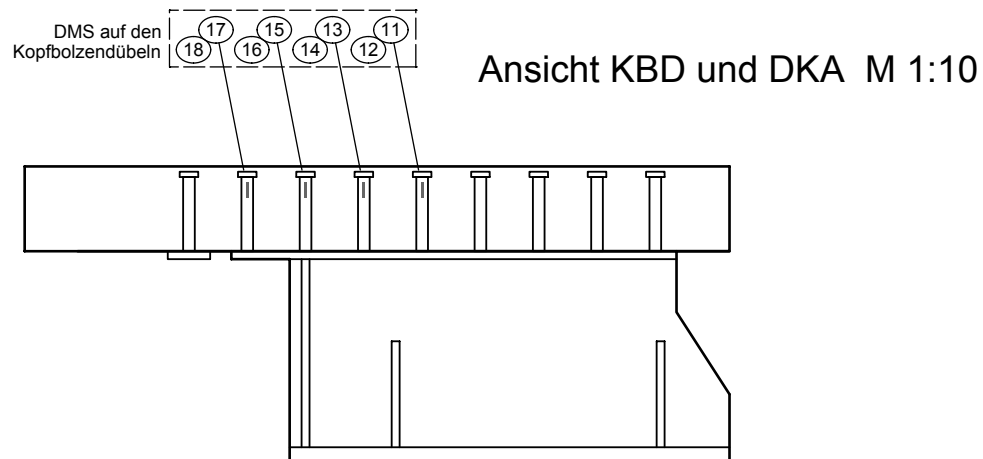
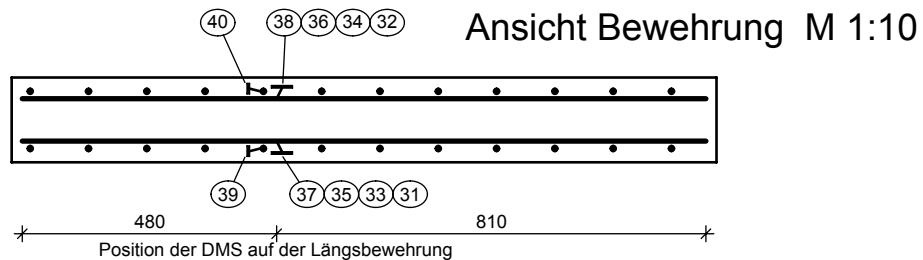
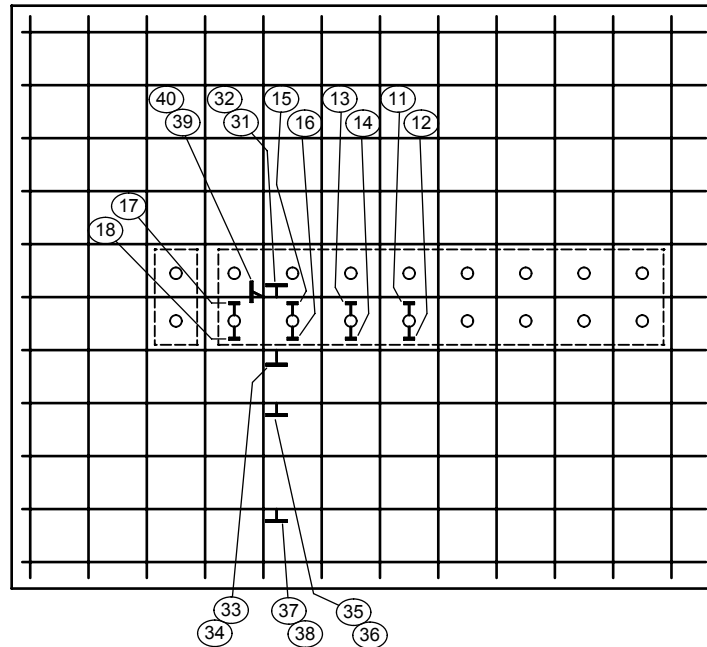
Dimensions and Elevation Data:

- Horizontal dimensions (top view): 110, 110, 110, 110, 110, 110, 110, 110, 110, 10
- Horizontal dimensions (side view): 200, 300, 57.5, 57.5, 15, 500, 200
- Vertical dimensions (side view): 160, 400, 974, 414, 500
- Elevations: +1632, +1474, +1314, +914, +500
- Other labels: P, A, B, M 24

Detail gevoutete Stahlplatte (unmaßstäblich)


$$H/B = 297.0 / 420.0 (0.12\text{m}^2)$$

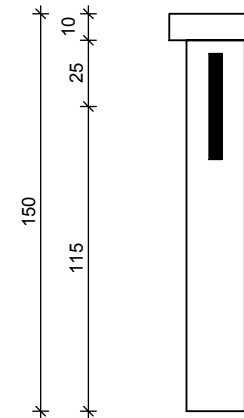
Draufsicht M 1:10



Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.


Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.



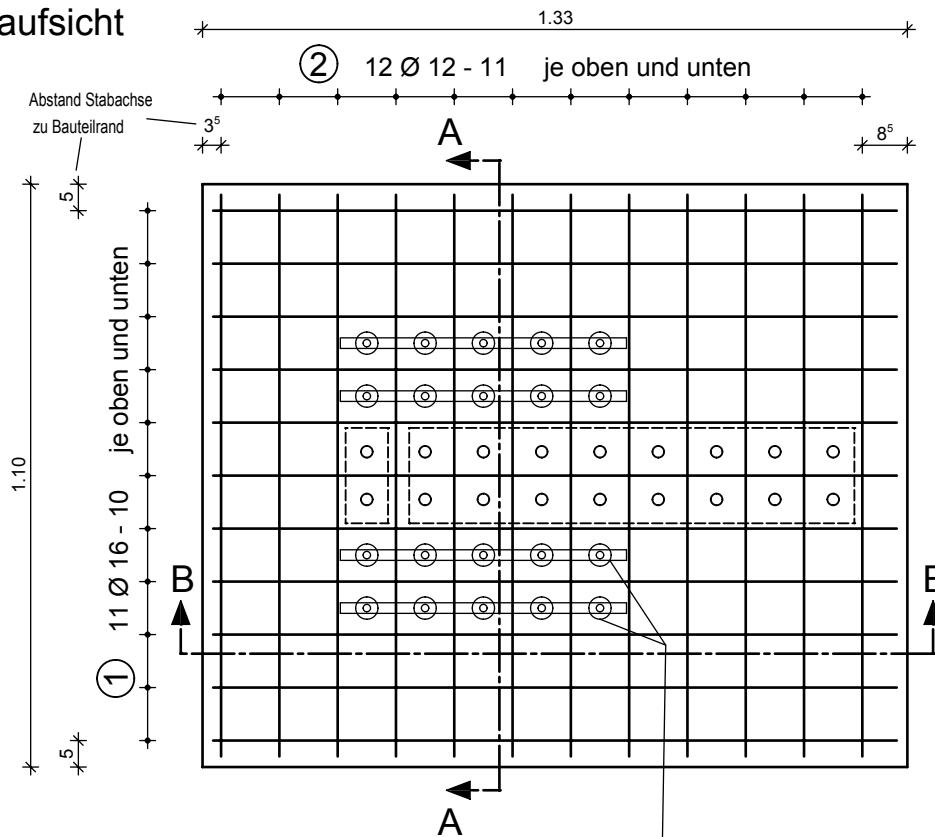
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

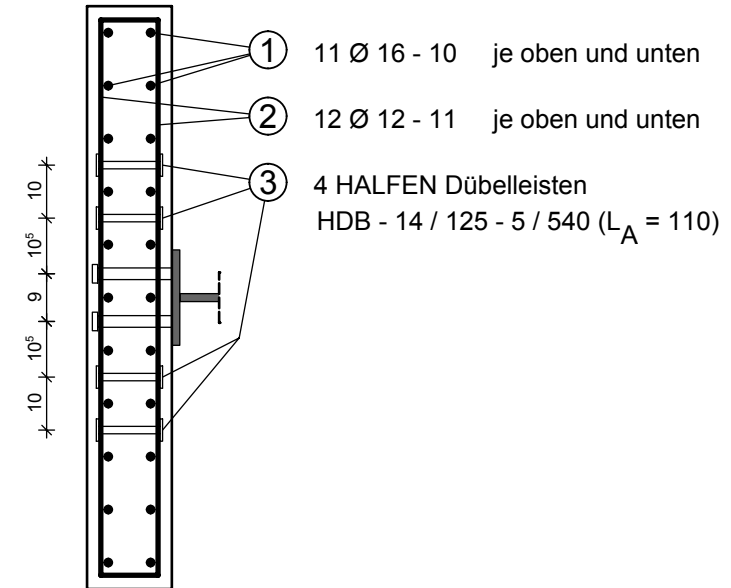
DMS auf Kopfbolzendübeln	11 - 18
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT			VERSUCH B1_P_D0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhrk.uni-kl.de www.massivbau.uni-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B1 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	148	07.07.2011		

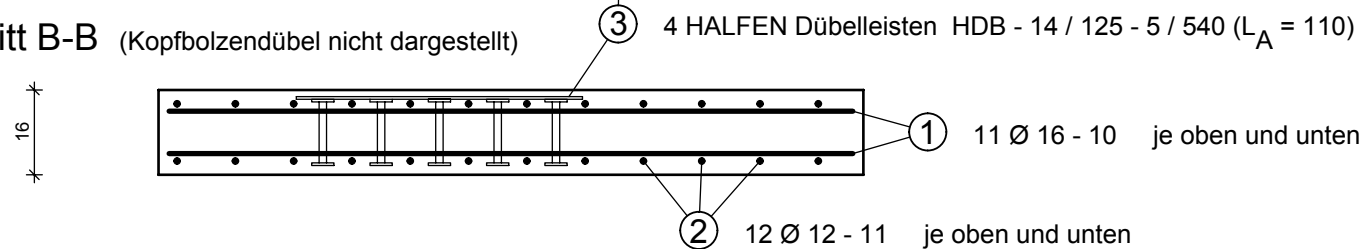
Draufsicht



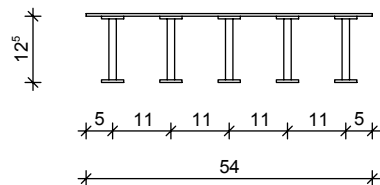
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)




Stahlauszüge



- 3 4 HALFEN Dübelleisten
HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14$ mm
Ankerhöhe $h = 125$ mm
Ankerabstand $L_A = 110$ mm

Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

alle Maße in cm

BAUHERR / OBJEKT			VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B1_P_D2		
PLANINHALT					
B1 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	153	07.07.2011		

Technical drawing showing the dimensions of a mechanical assembly. The drawing includes a cross-section of a base plate, a central vertical rod, and a rectangular block.

Horizontal Dimensions (mm):

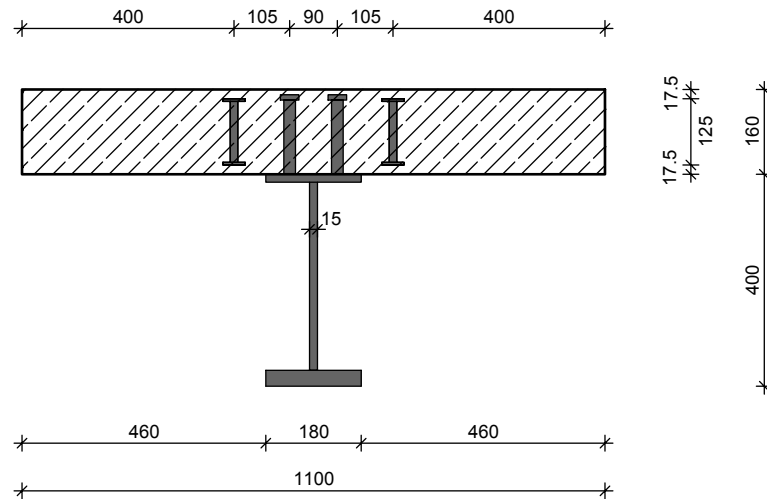
- Top: 505, 90, 505
- Bottom: 460, 180, 460
- Total Width: 1100
- Block Width: 82.5, 82.5

Vertical Dimensions (mm):

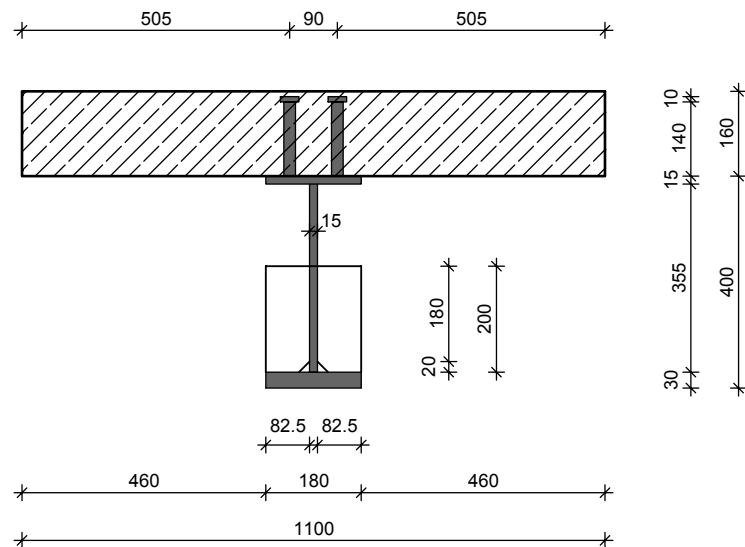
- Right Side (from top to bottom): 10, 140, 15, 355, 400
- Central Rod (from top to bottom): 20, 180, 200

$$H/B = 297.0 / 420.0 \text{ (0.12m}^2\text{)}$$

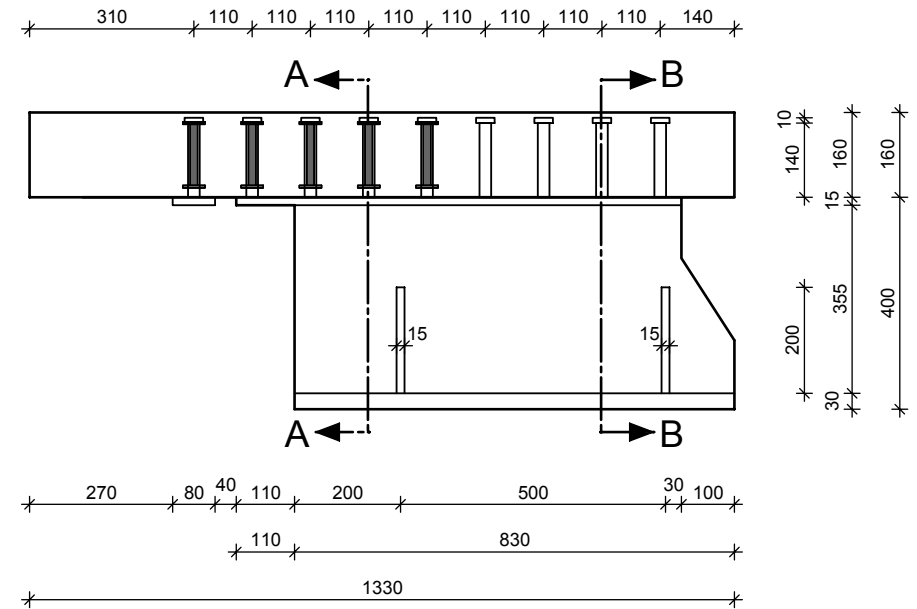
Schnitt A-A




Schnitt B-B

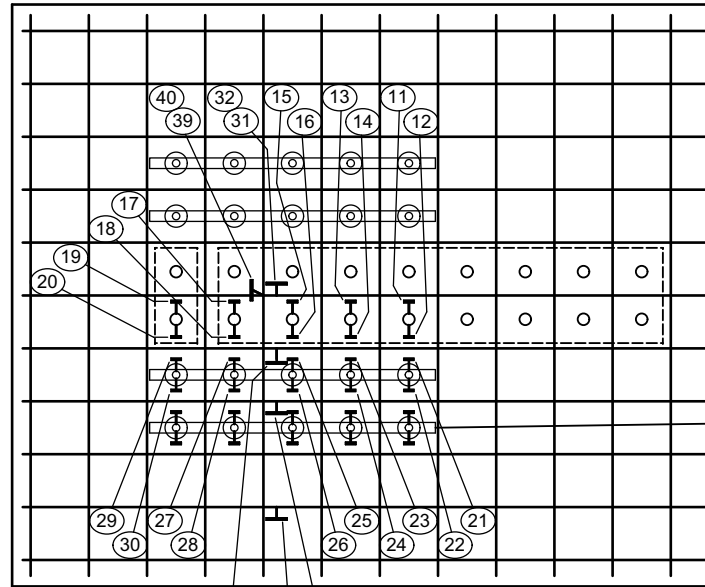


Ansicht

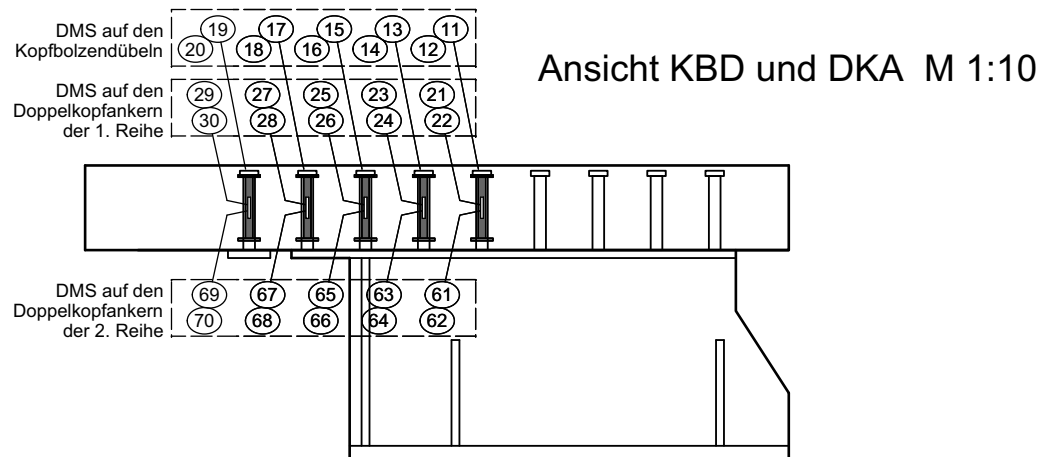
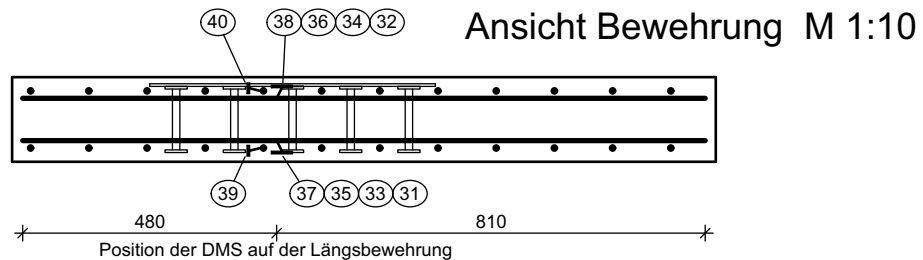


BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rhtk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B1_P_D1_St		
PLANINHALT		B1 Versuchskörper		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	155	07.07.2011	

Draufsicht M 1:10



DMS auf den Doppelkopfkankern der 2. Reihe identisch mit denen der 1. Reihe
Nummerierung von (61) bis (68)



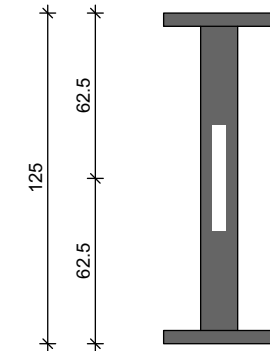
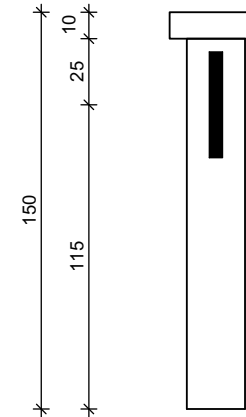
Erstellt mit einer Schulversion von Allplan

Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

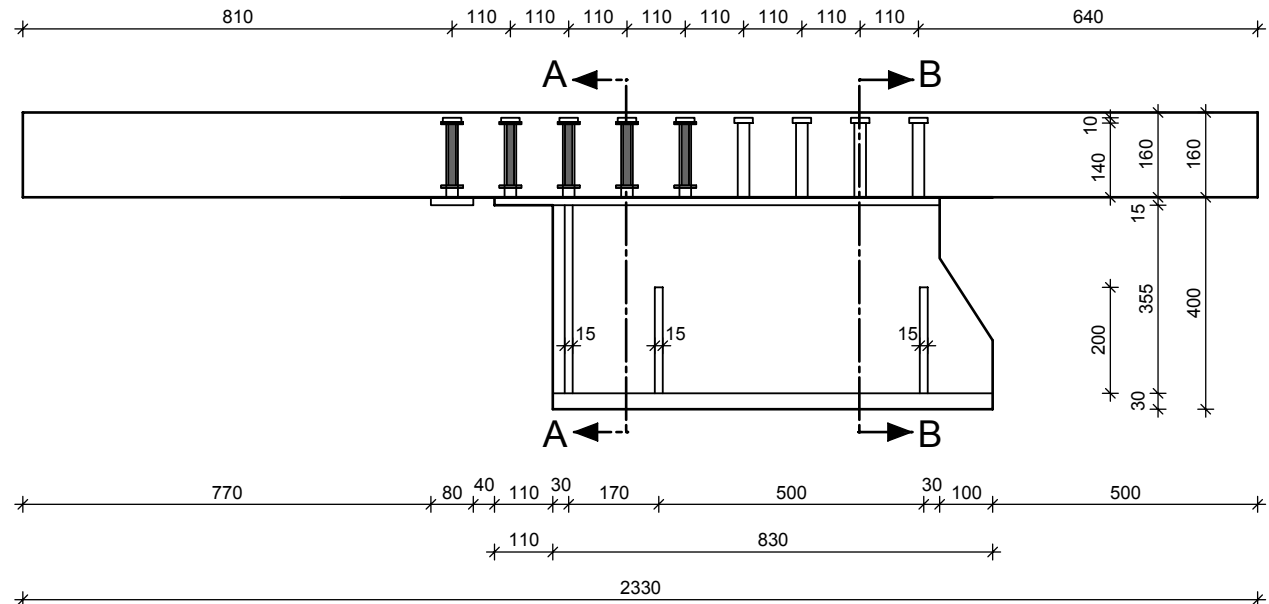
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 20 und 71 - 76
DMS auf Doppelkopfkankern der 1. Reihe	21 - 30 und 81 - 86
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40
DMS auf Doppelkopfkankern der 2. Reihe	61 - 70

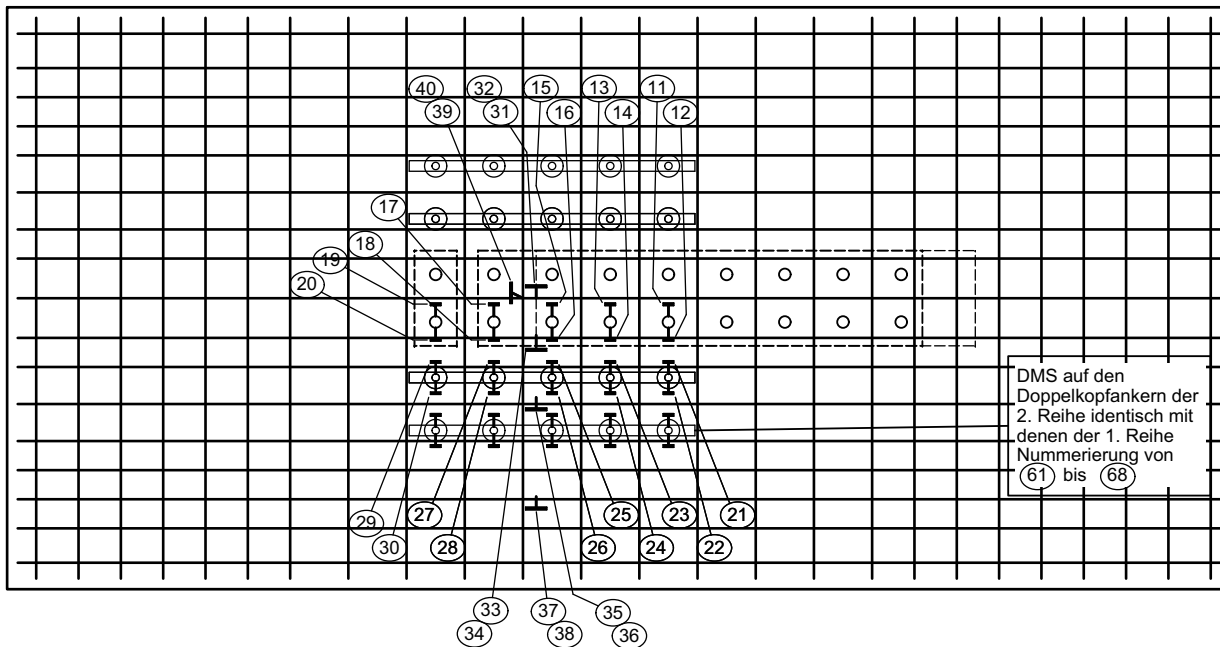
BAUHERR / OBJEKT			VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbbalzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B1_P_D2 B1_P_D2_KA		
PLANINHALT					
B1 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	158	10.07.2011		

H/B = 297.0 / 420.0 (0.12m²)

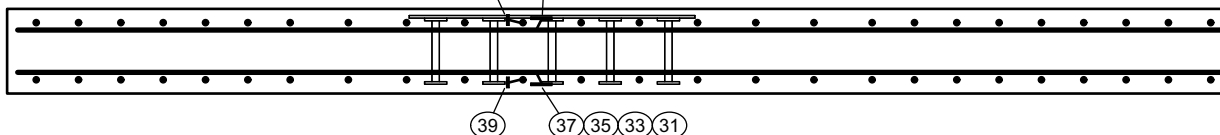
Allplan 2006

Allplan 2006

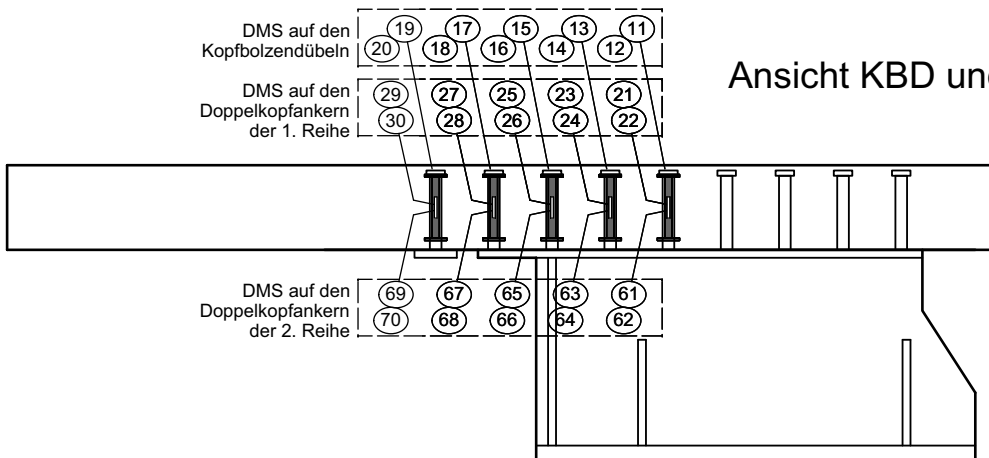
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

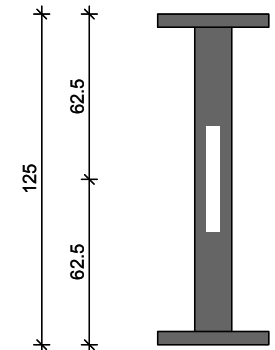
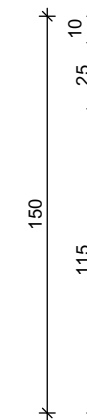


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



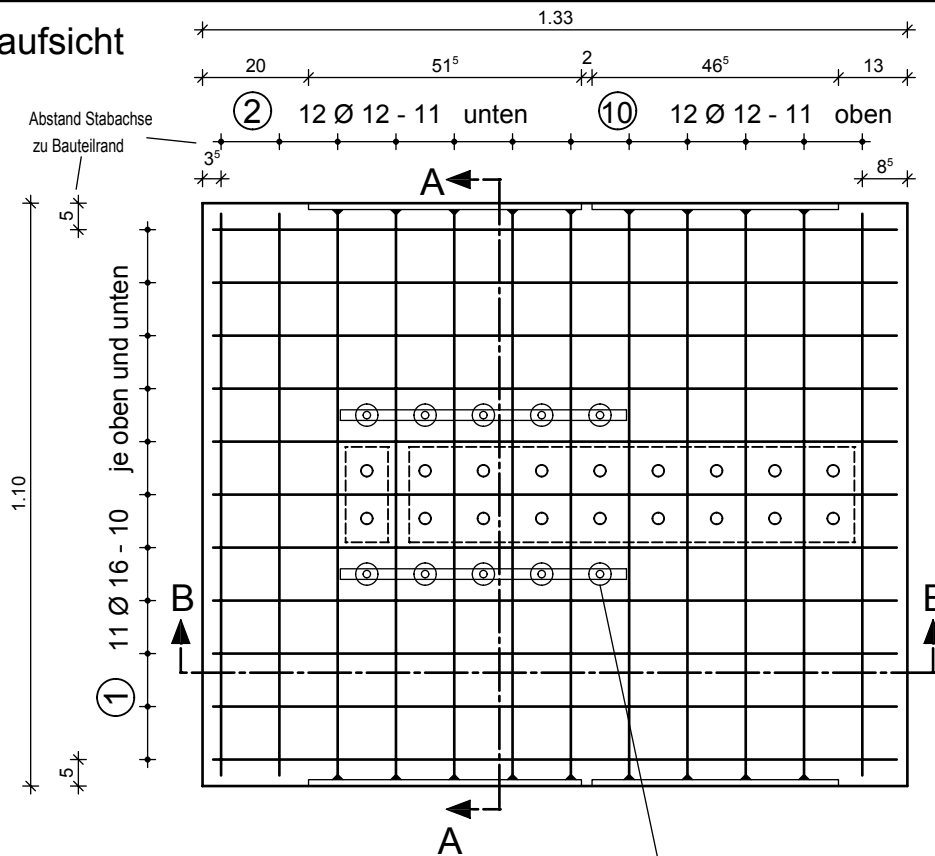
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

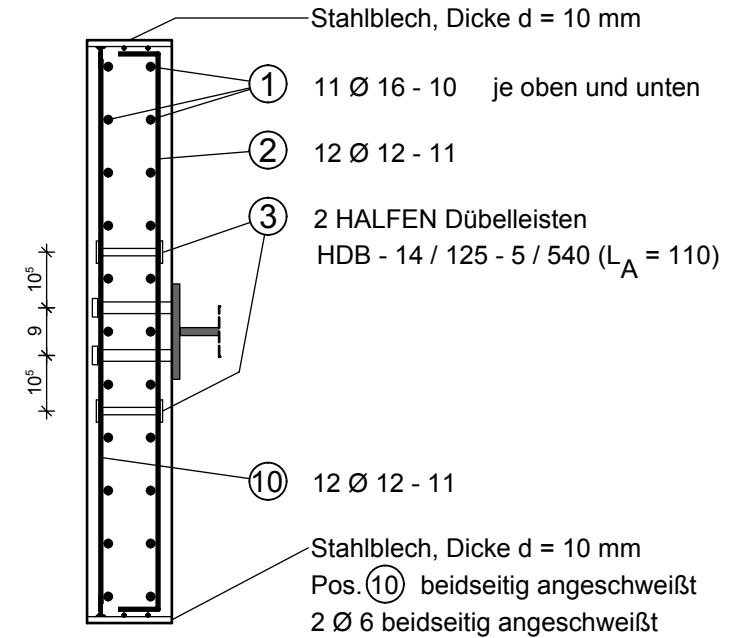
DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkankern der 1. Reihe	21 - 30
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40
DMS auf Doppelkopfkankern der 2. Reihe	61 - 70

BAUHERR / OBJEKT			VERSUCHE		 <div>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</div> <div>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</div> <div>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</div> <div>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rhtk.uni-kl.de www.massivbau-kl.de</div>
DFG - Verbundträger mit Dübelleisten			B1_N_D2 B1_N_D2_ka		
PLANINHALT			B1 Messtechnik - DMS		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	168	10.07.2011		

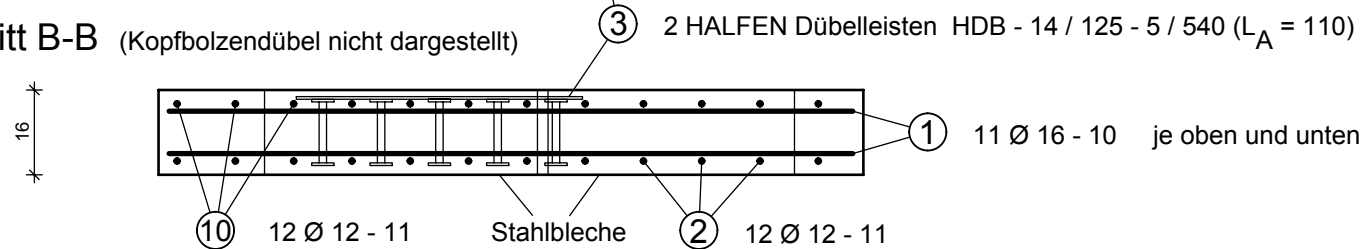
Draufsicht



Schnitt A-A



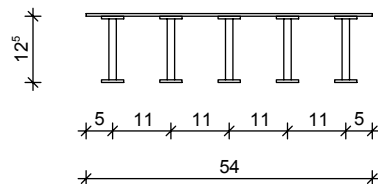
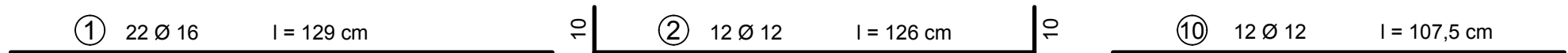
Schnitt B-B (Kopfbolzendübel nicht dargestellt)




Betondeckung: $c_{nom} = 2 \text{ cm}$
an jeder Stelle

alle Maße in cm

Stahlauszüge



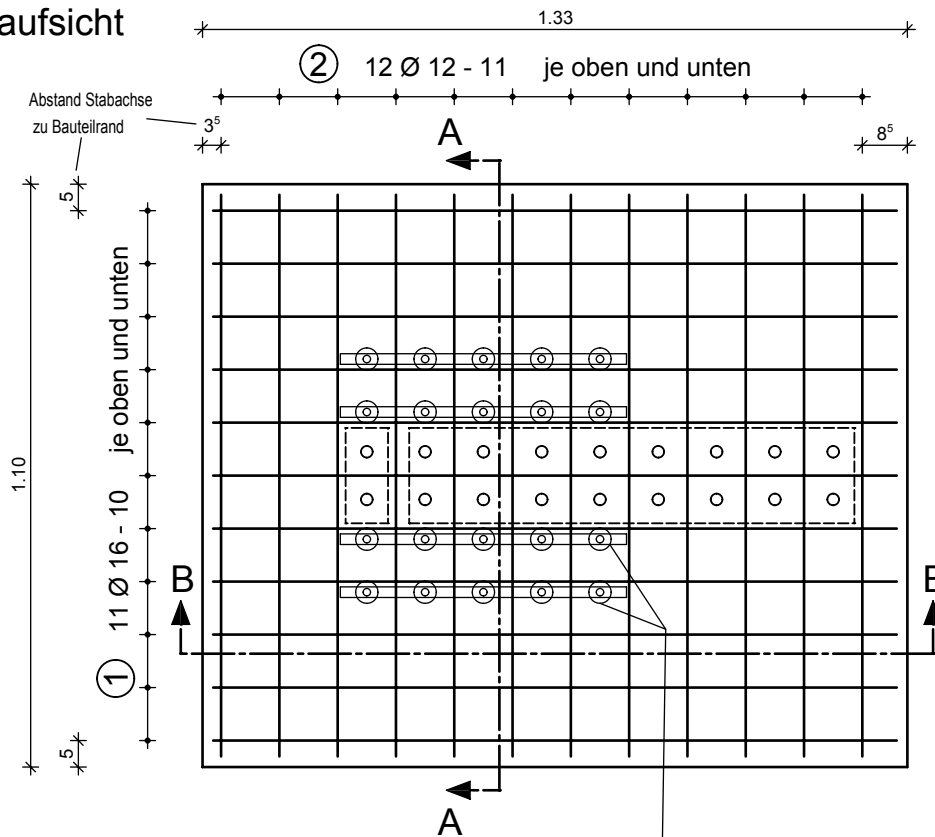
106

BAUHERR / OBJEKT			VERSUCHE B1_P_D1_Qb	 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rthk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B1 Bewehrung				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	172	07.07.2011	

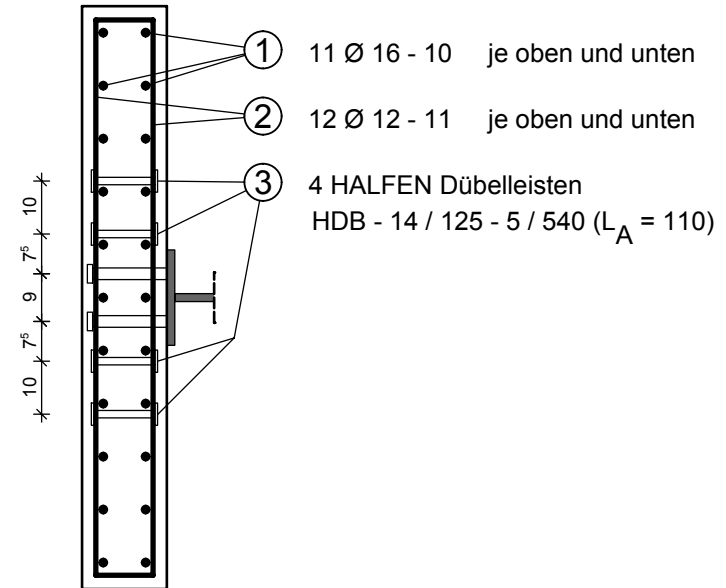
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

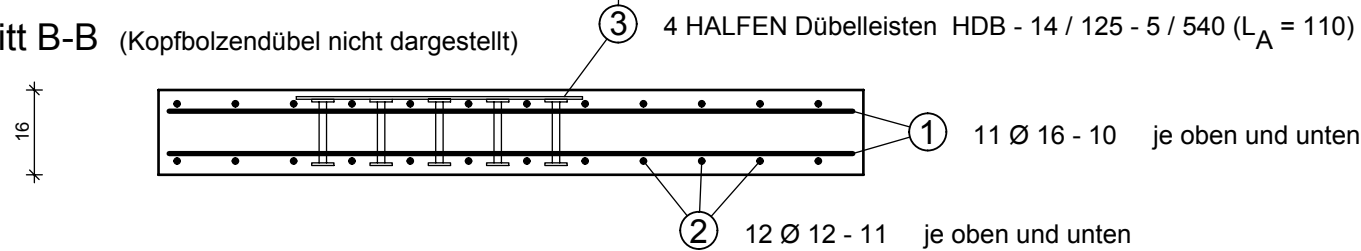
Draufsicht



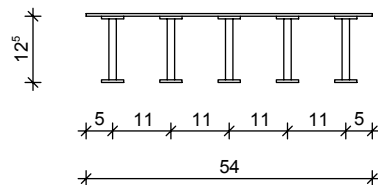
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)



Stahlauszüge




- ③ 4 HALFEN Dübelleisten
HDB - 14 / 125 - 5 / 540 ($L_A = 110$)
Durchmesser $d = 14$ mm
Ankerhöhe $h = 125$ mm
Ankerabstand $L_A = 110$ mm

Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

alle Maße in cm

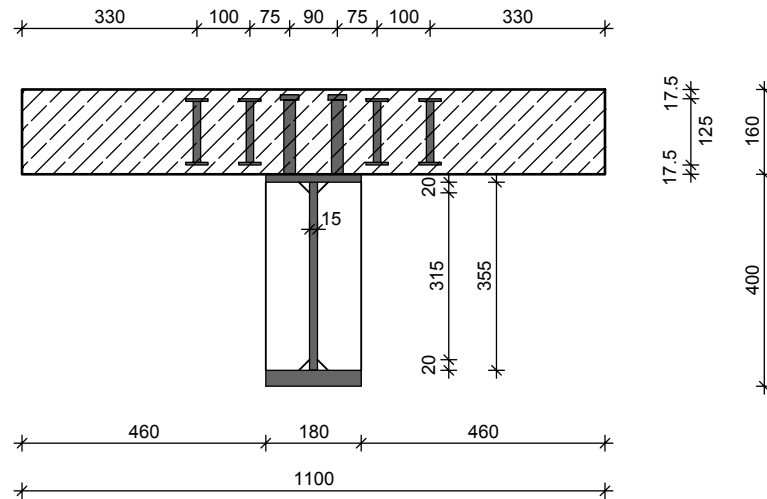
106

BAUHERR / OBJEKT			VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@thkr.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten			B1_P_D2_ka		
PLANINHALT					
B1 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	173	07.07.2011		

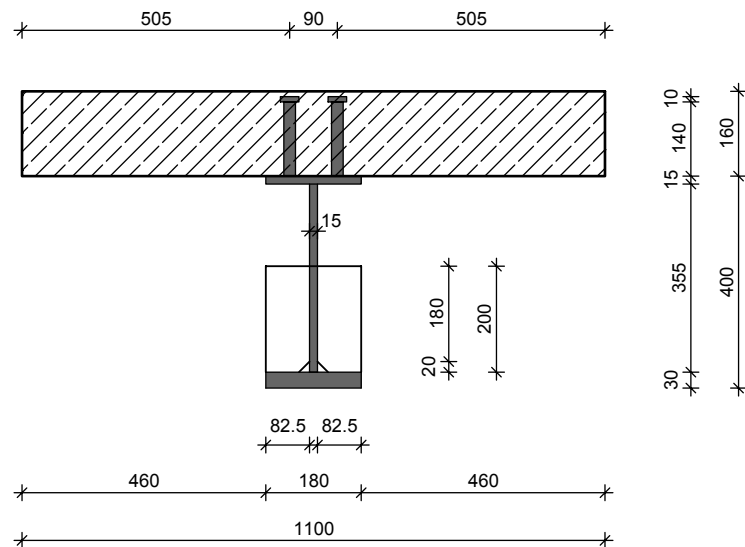
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

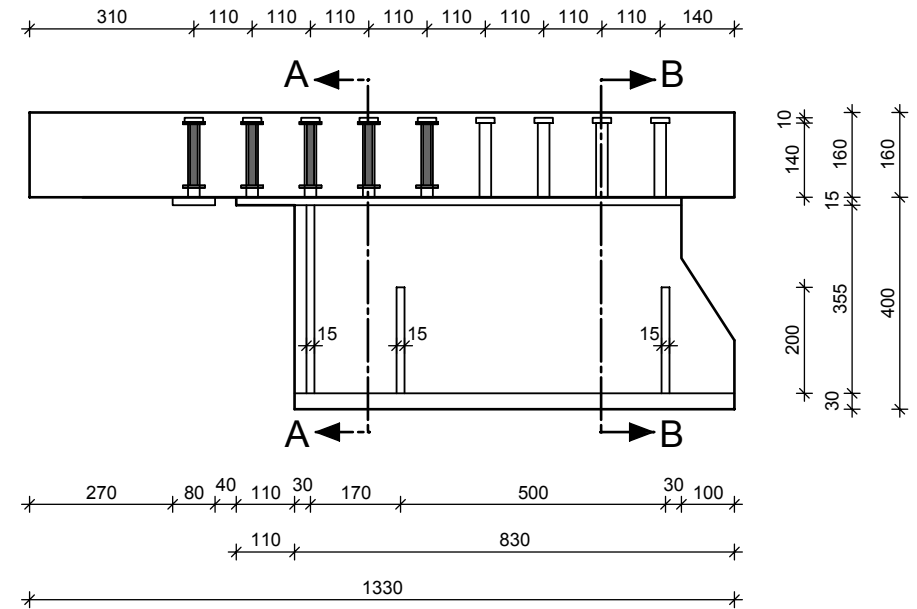
Schnitt A-A




Schnitt B-B

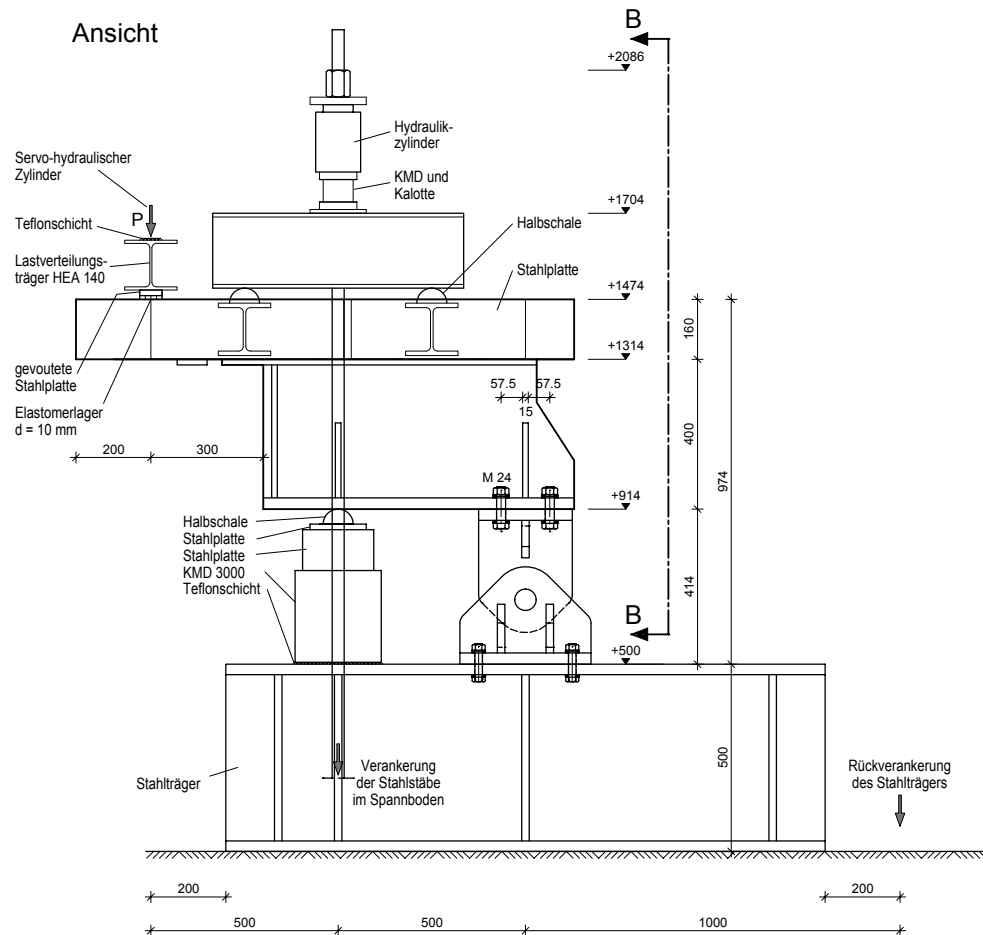


Ansicht

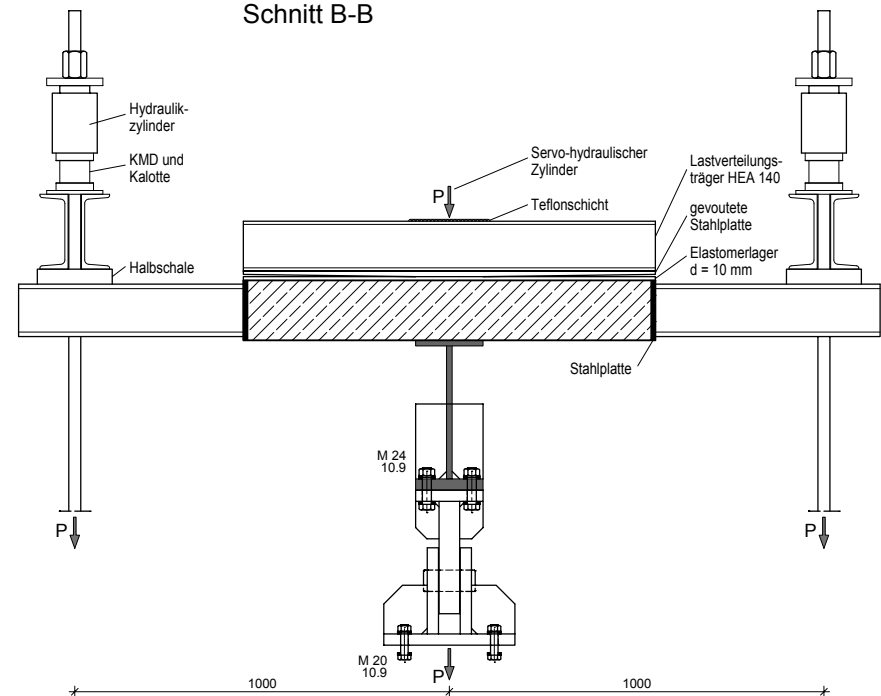


BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rhtk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B1_P_D2_ka		
PLANINHALT		B1 Versuchskörper		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	174	07.07.2011	

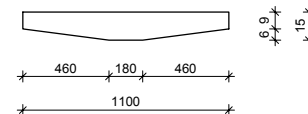
Ansicht



Schnitt B-B



Detail gevoutete Stahlplatte
(unmaßstäblich)

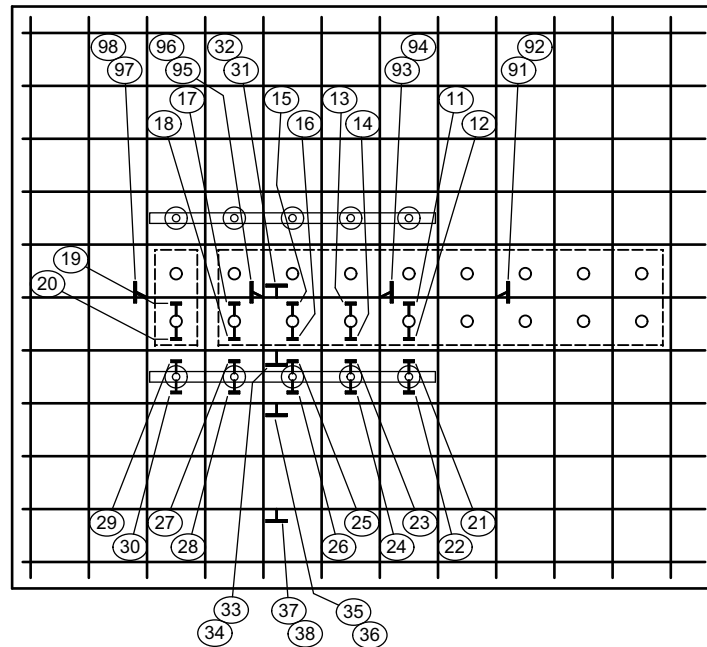


BAUHERR / OBJEKT		VERSUCHE	
DFG - Verbundträger mit Dübelleisten		B1_P_D1_Qb	
PLANINHALT			
B1 Versuchsaufbau			
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM
1:10	SCHN 771/4-1	175	07.07.2011

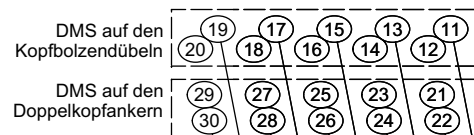
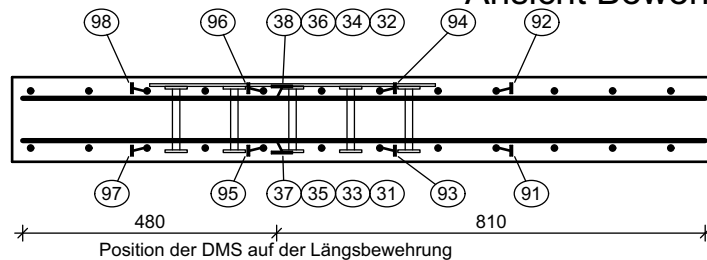
H/B = 297.0 / 590.0 (0.18m²)

Allplan 2006

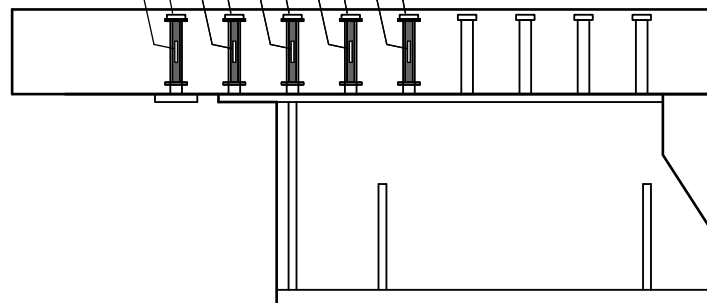
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

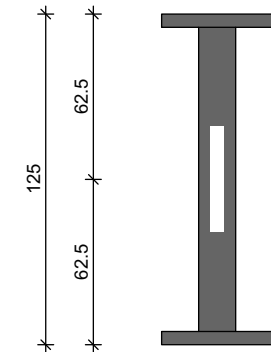
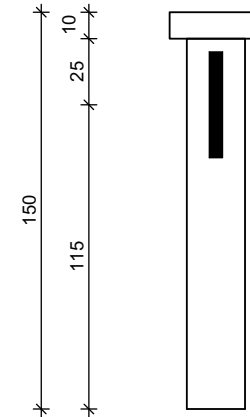


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkern werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

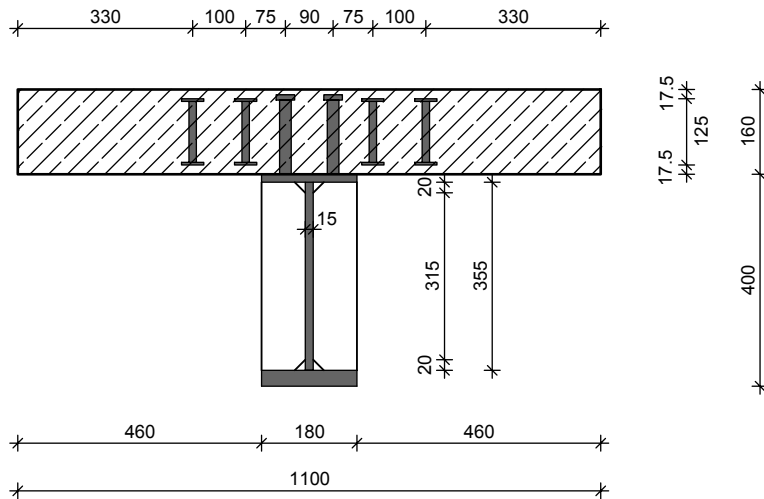
DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkern	21 - 30
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT			VERSUCHE B1_P_D1_Qb		 <p>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</p> <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rhrk.uni-kl.de www.massivbau-kl.de</p>
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B1 Messtechnik - DMS					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	178	10.07.2011		

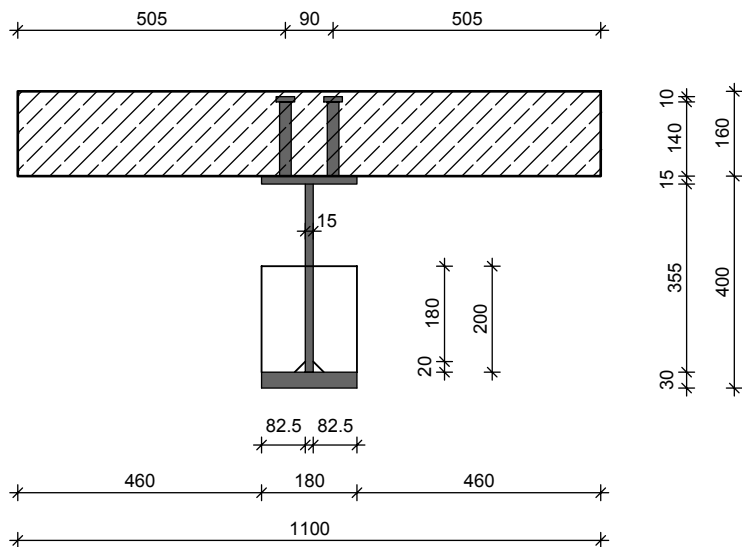
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

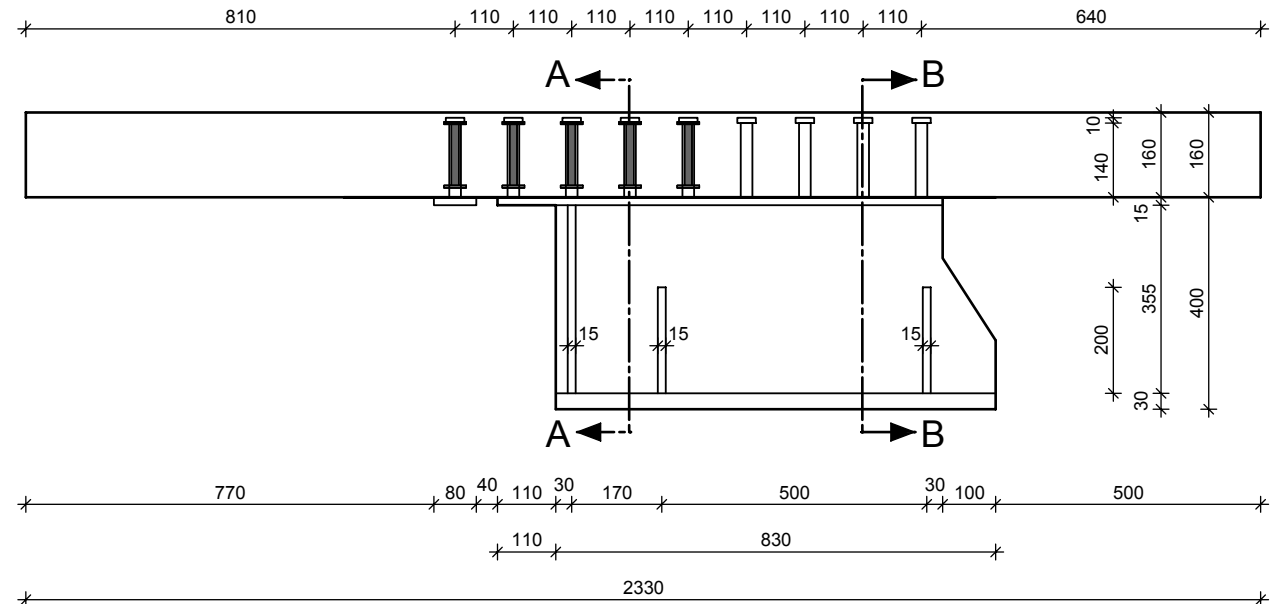
Schnitt A-A




Schnitt B-B

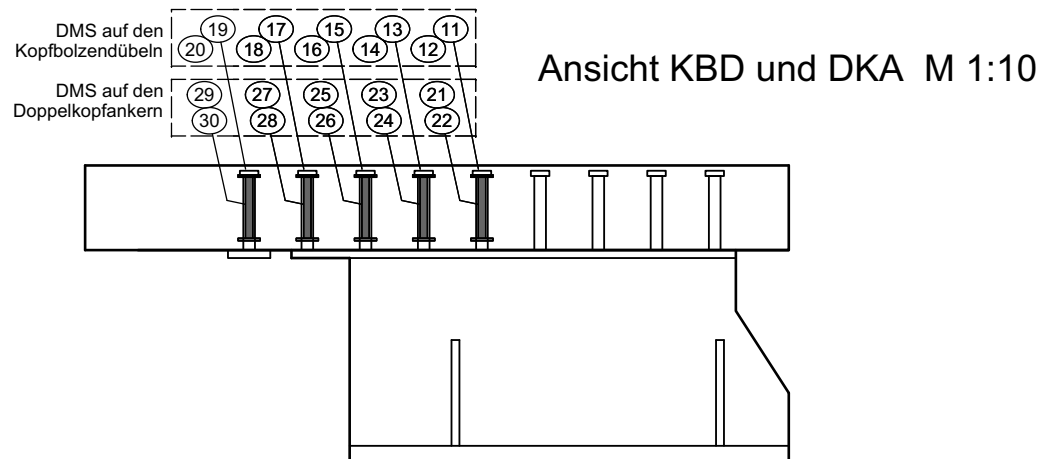
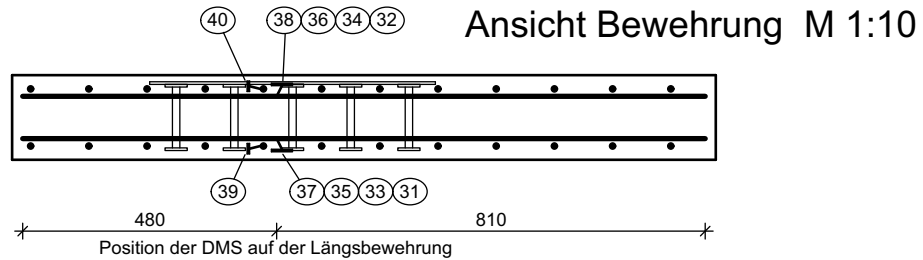
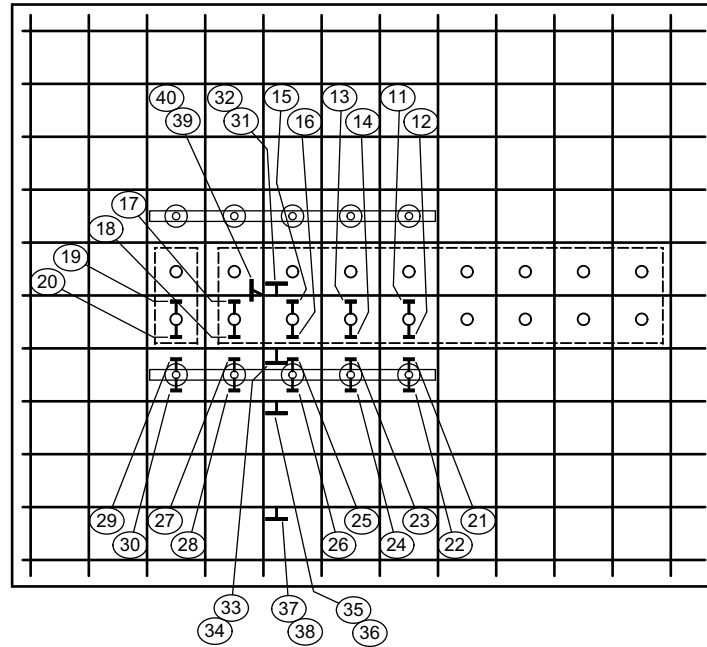


Ansicht



BAUHERR / OBJEKT		VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhtk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B1_N_D2_ka		
PLANINHALT				
B1 Versuchskörper				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	184	07.07.2011	

Draufsicht M 1:10

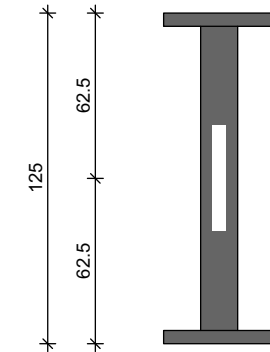
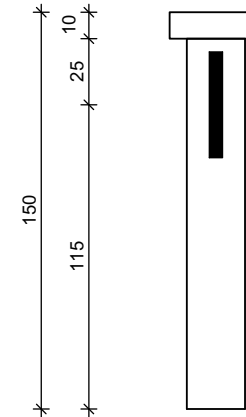


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



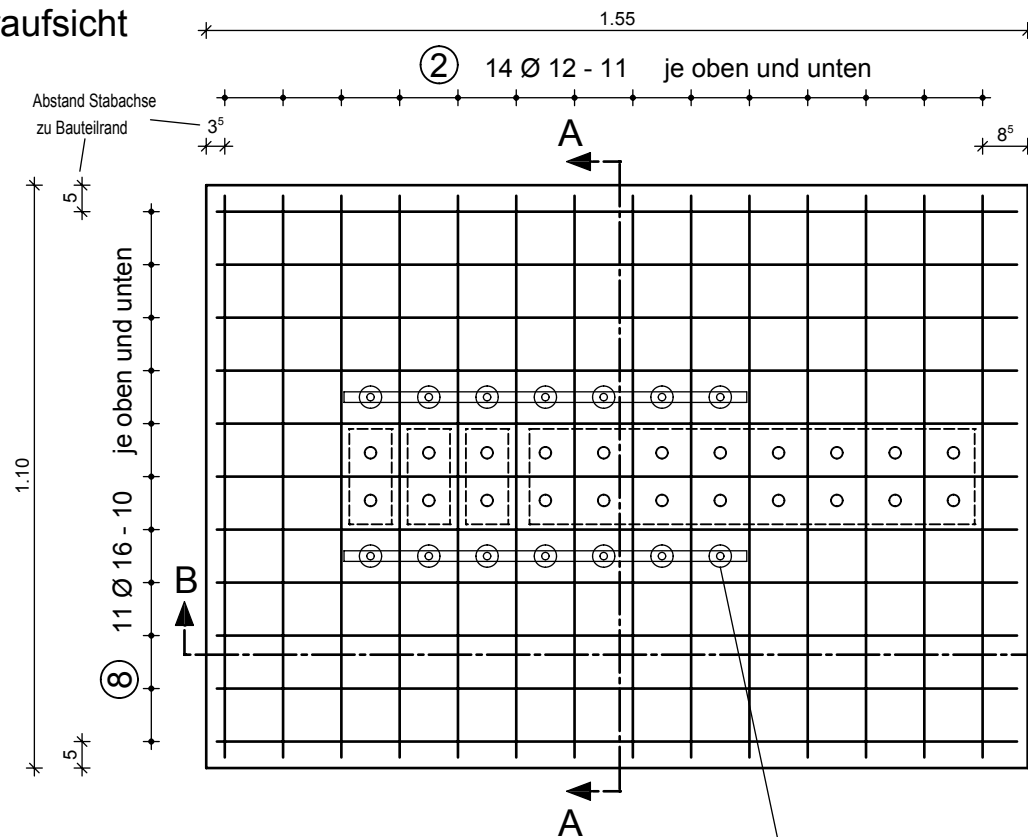
Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

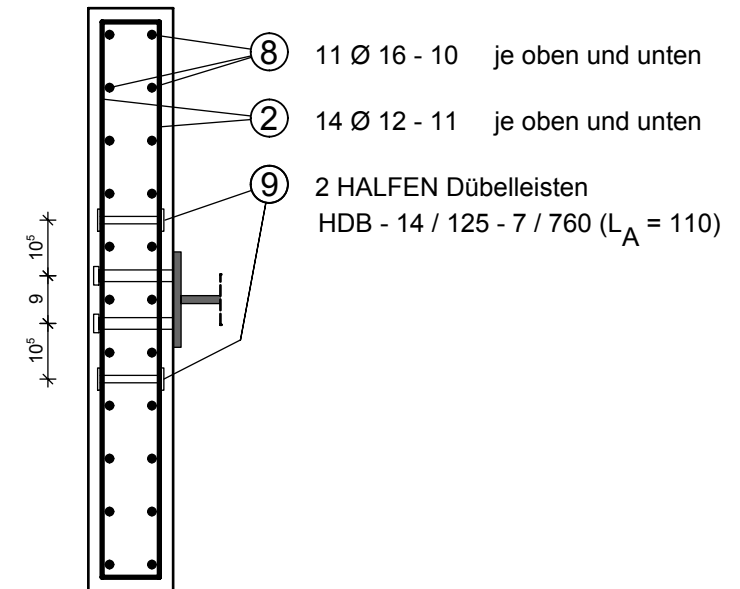
DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkankern	21 - 30
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B1_P_D1_St		
PLANINHALT		B1 Messtechnik - DMS		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:2, 1:10	SCHN 771/4-1	188	10.07.2011	

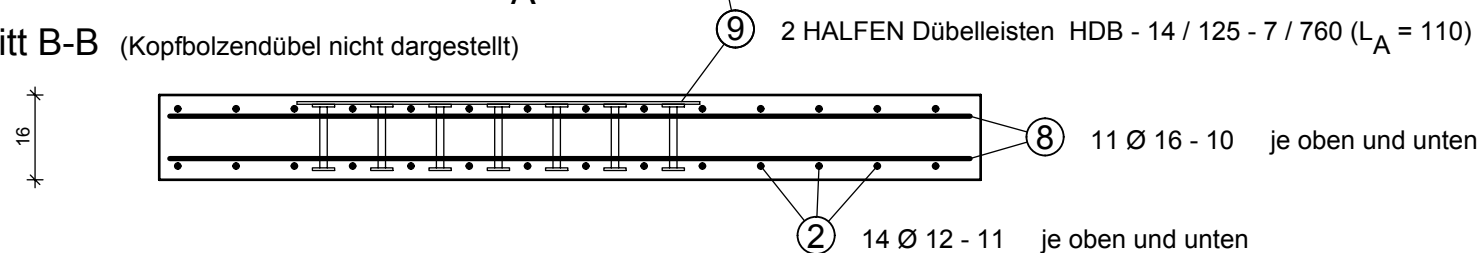
Draufsicht



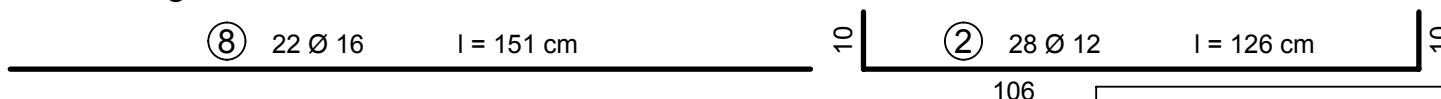
Schnitt A-A



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

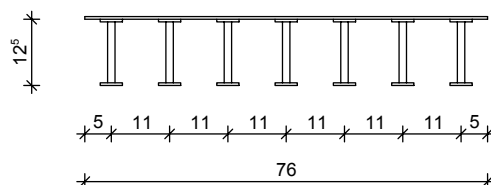



Stahlauszüge



Betondeckung: $c_{nom} = 2$ cm
an jeder Stelle

alle Maße in cm

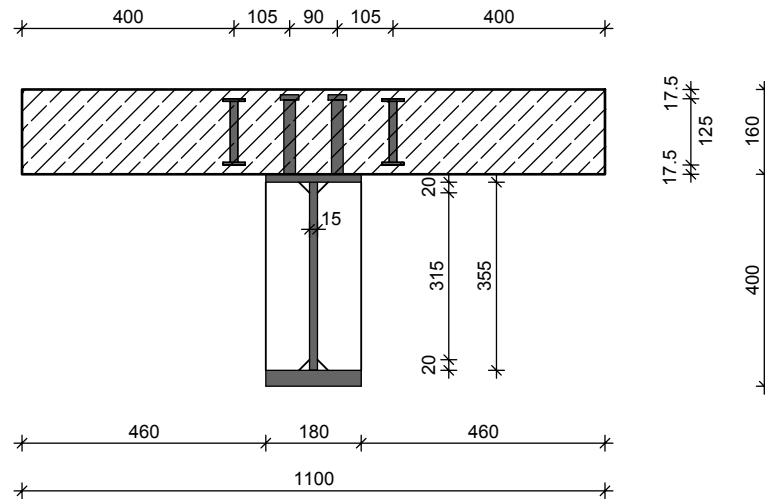


BAUHERR / OBJEKT			VERSUCHE B1_P_D1_gO		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rnhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B1 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	193	07.07.2011		

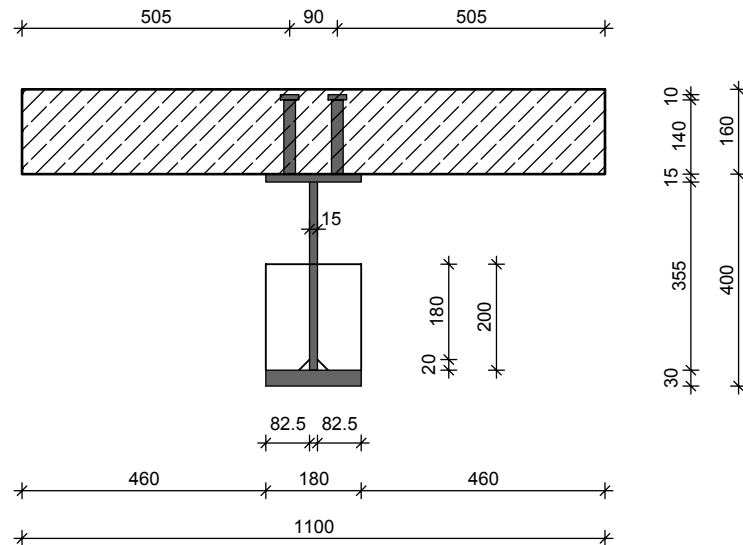
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

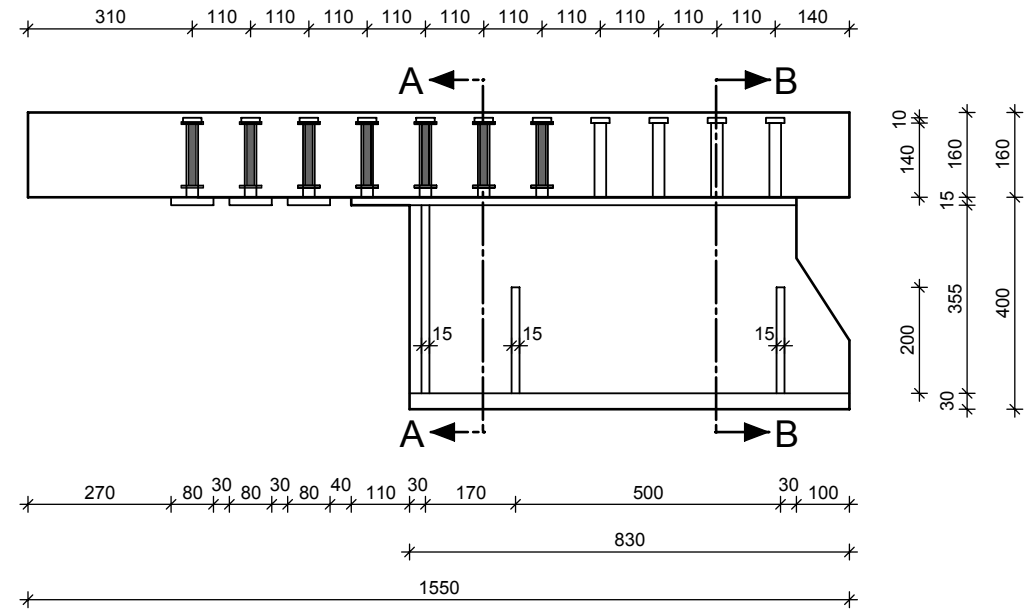
Schnitt A-A




Schnitt B-B

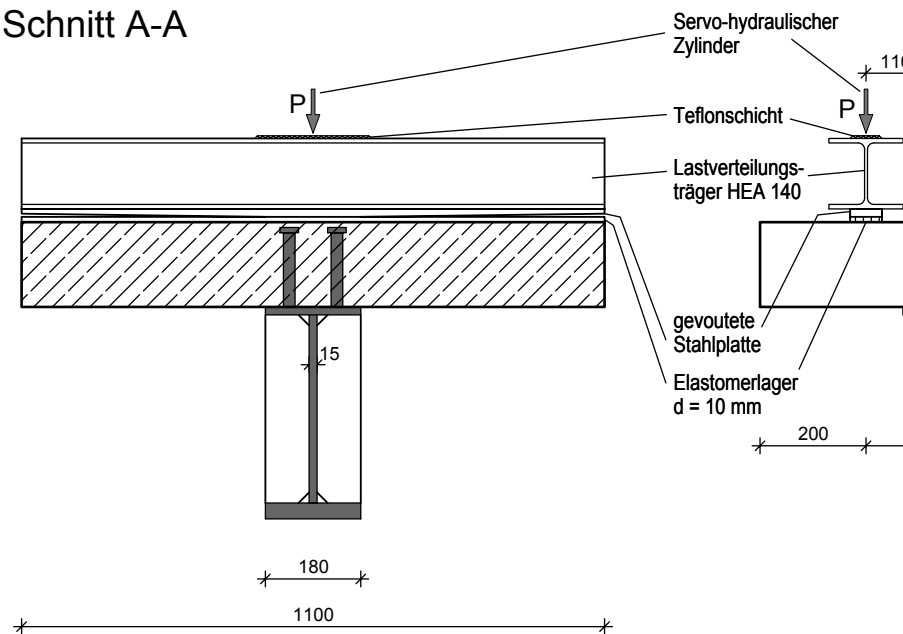


Ansicht

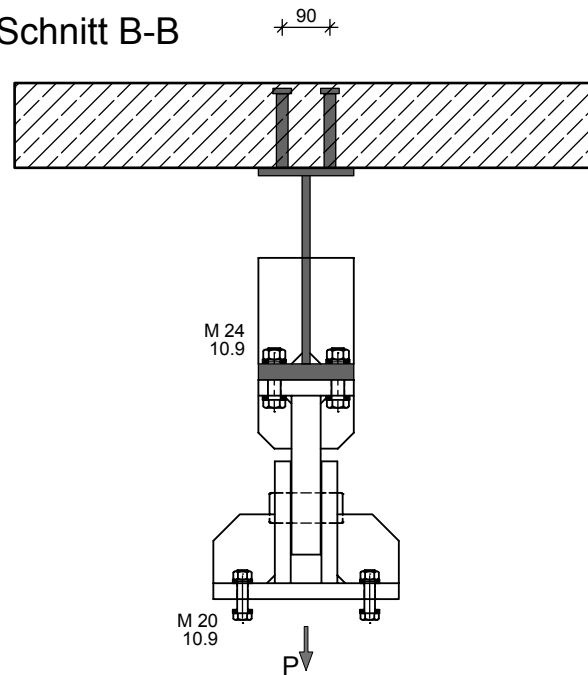


BAUHERR / OBJEKT		VERSUCH		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@rhtk.uni-kl.de www.massivbau.uni-kl.de
DFG - Verbundträger mit Dübelleisten		B1_P_D1_gO		
PLANINHALT				
B1 Versuchskörper				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	194	07.07.2011	

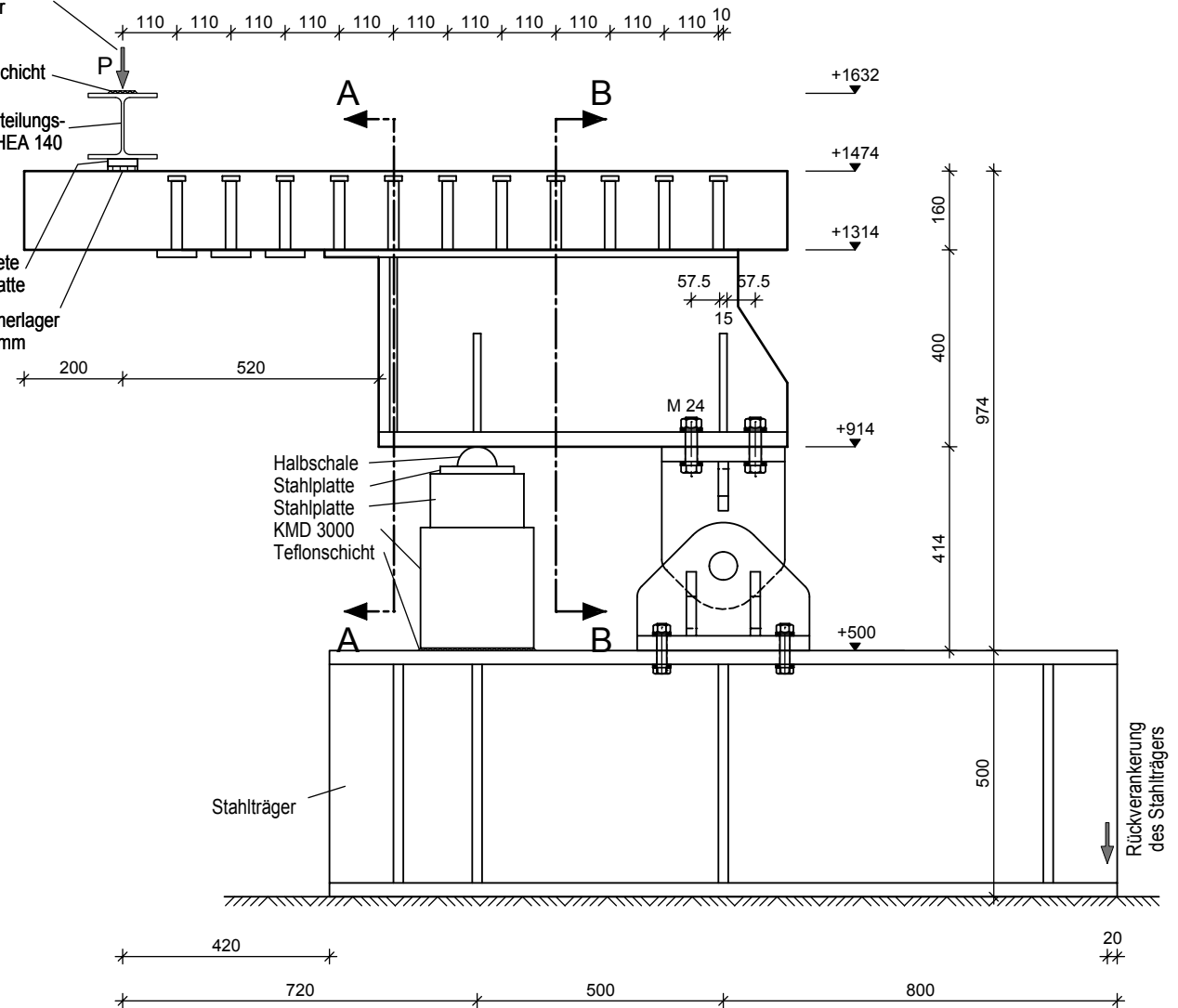
Schnitt A-A



Schnitt B-B

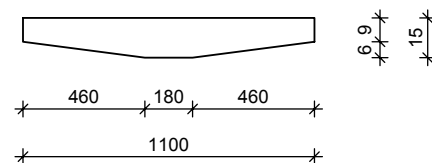



Ansicht



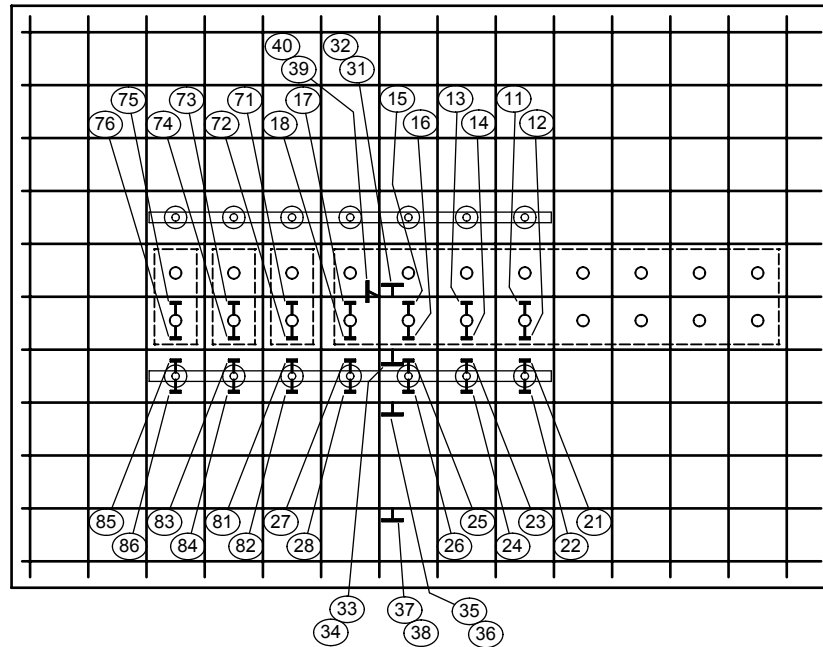
Doppelkopfanker sind nicht dargestellt.

Detail gevoutete Stahlplatte (unmaßstäblich)

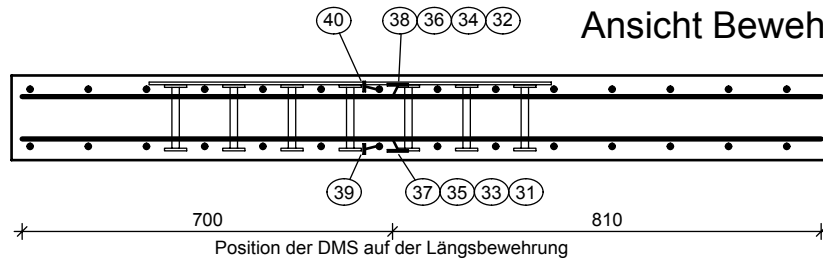


BAUHERR / OBJEKT		VERSUCHE B1_P_D1_g0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbalzer@mrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B1 Versuchsaufbau				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	195	07.07.2011	

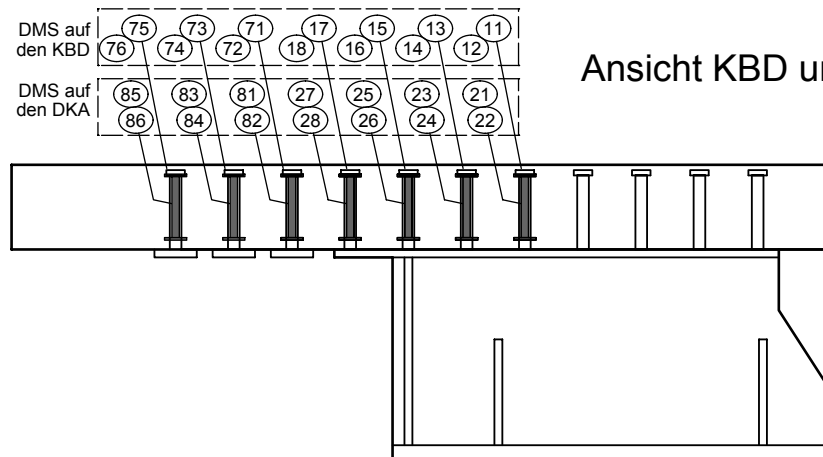
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

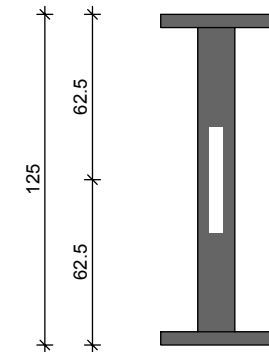
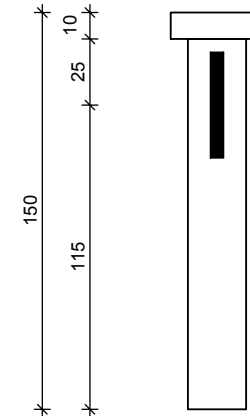


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

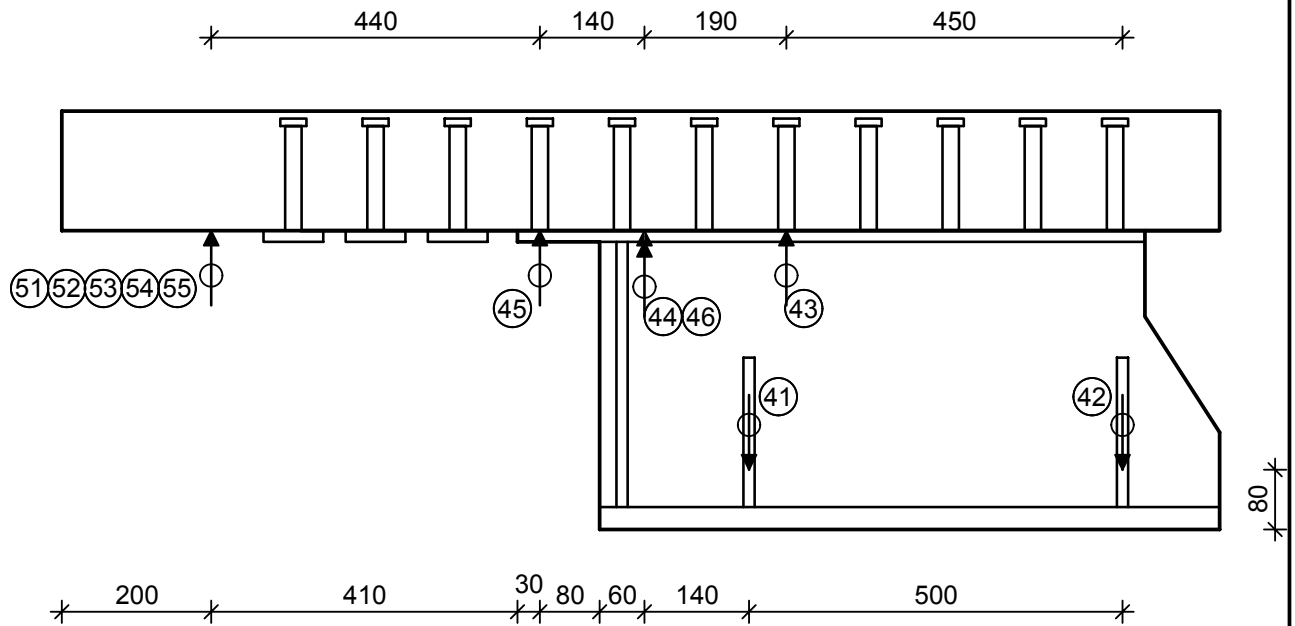
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 18 und 71 - 76
DMS auf Doppelkopfkankern	21 - 28 und 81 - 86
DMS auf Längsbewehrung	31 - 38
DMS auf Querbewehrung	39 - 40

BAUHERR / OBJEKT		VERSUCHE B1_P_D1_gO		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B1 Messtechnik - DMS				
MASSTAB 1:2, 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 198	DATUM 07.07.2011	

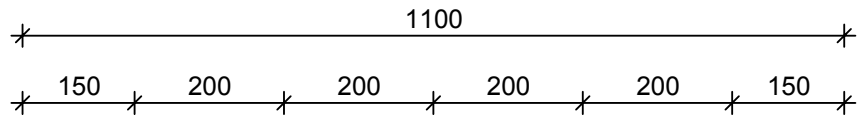
Ansicht

Anordnung Wegaufnehmer

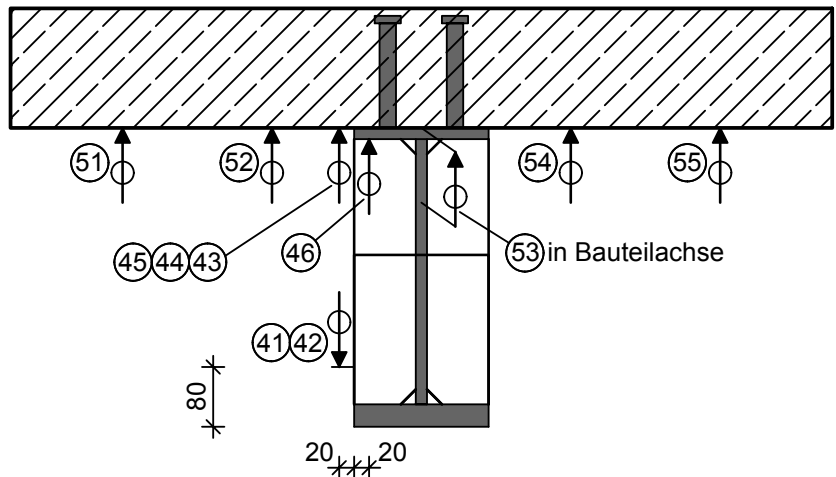


Doppelkopfkanker sind nicht dargestellt.

Schnitt



Weg- aufnehmer	Messlänge
(41)(42)	10 mm
(43)(46)	20 mm
(44)(45)	40 mm
(51)(52)(53)(54)(55)	40 mm



BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B1 Messtechnik - Wegaufnehmer

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

199

VERSUCHE

B1_P_D1_g0

DATUM

07.07.2011



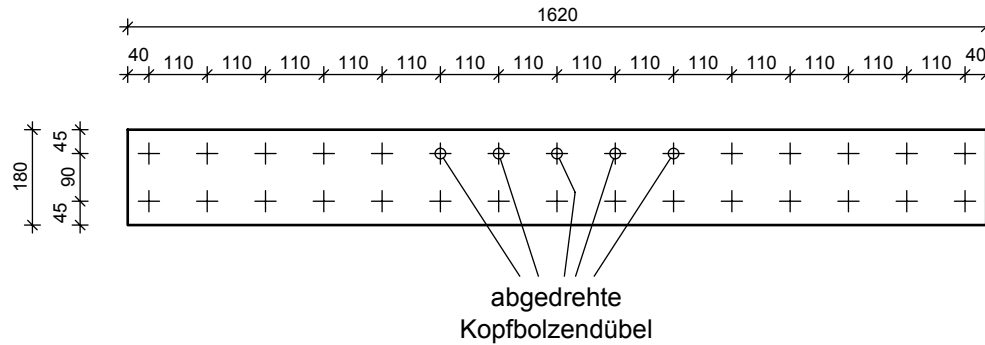
Dipl.-Ing. Christian Balzer
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Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

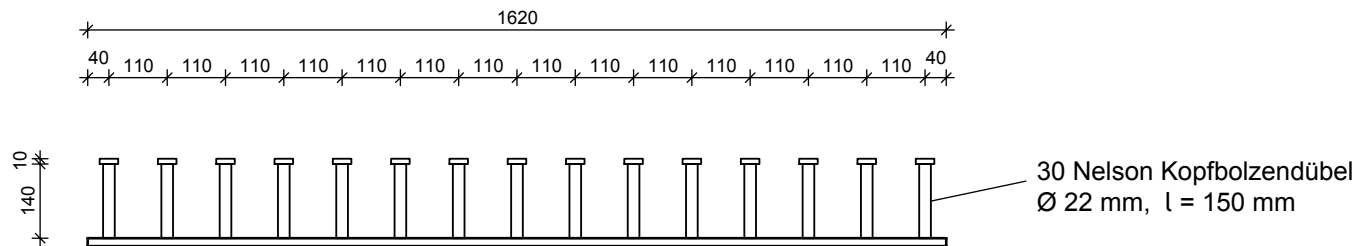
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Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de


Anordnung der Kopfbolzendübel

Draufsicht M 1:10

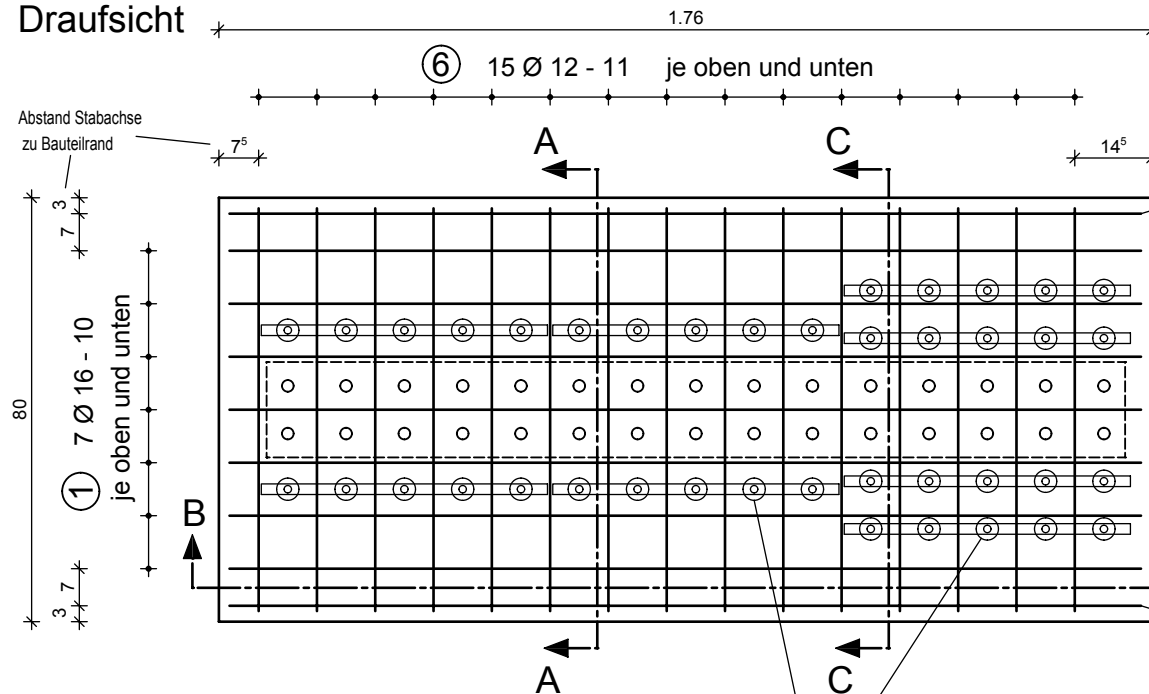


Ansicht M 1:10

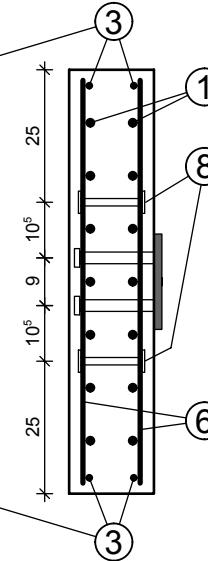


BAUHERR / OBJEKT			VERSUCHE		 <p>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</p> <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@mrk.uni-kl.de www.massivbau-kl.de</p>
DFG - Verbundträger mit Dübelleisten			B3_P_D1 B3_O_D1 B3_P_D0		
PLANINHALT					
B3 Anordnung der Kopfbolzendübel					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	222	07.07.2011		

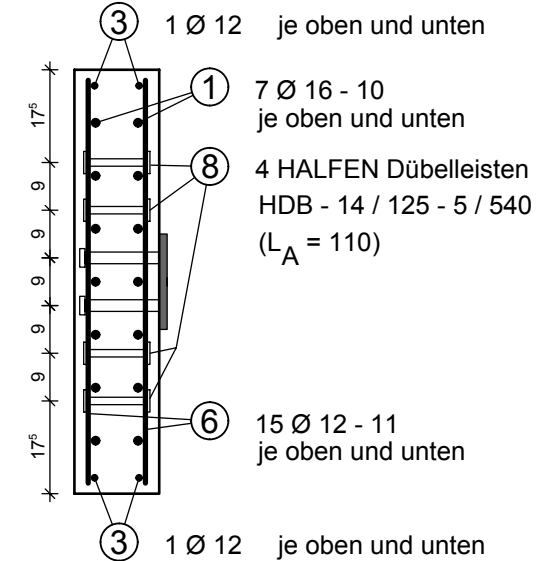
Draufsicht



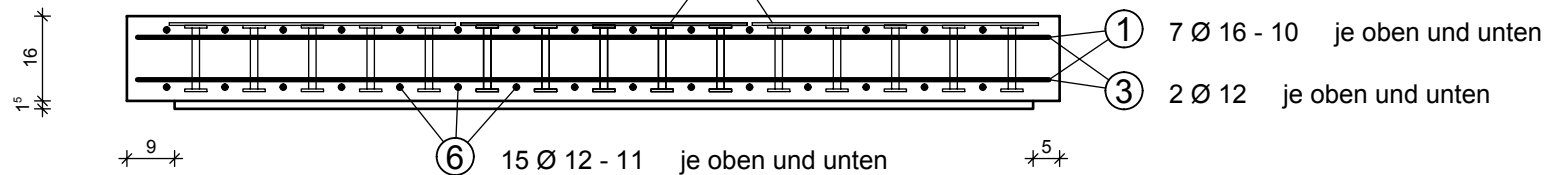
Schnitt A-A



Schnitt C-C



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

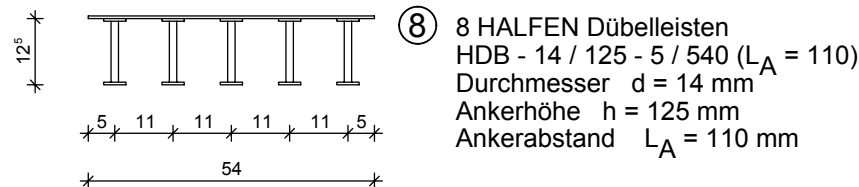


Stahlauszüge

6 30 Ø 12 $l = 76 \text{ cm}$


1 14 Ø 16 $l = 172 \text{ cm}$

3 4 Ø 12 $l = 172 \text{ cm}$



Betondeckung: $c_{nom} = 2 \text{ cm}$ an jeder Stelle

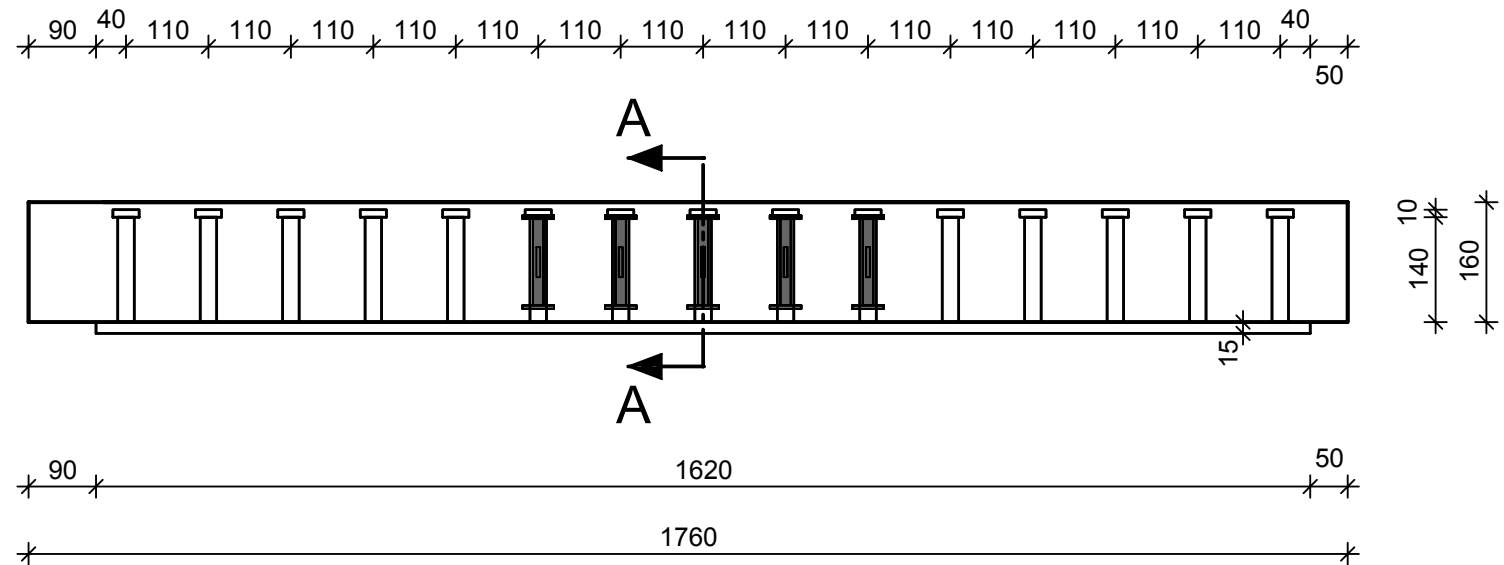
alle Maße in cm

BAUHERR / OBJEKT			VERSUCHE B3_P_D1 B3_0_D1		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@rnk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B3 Bewehrung					
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 223	DATUM 07.07.2011		

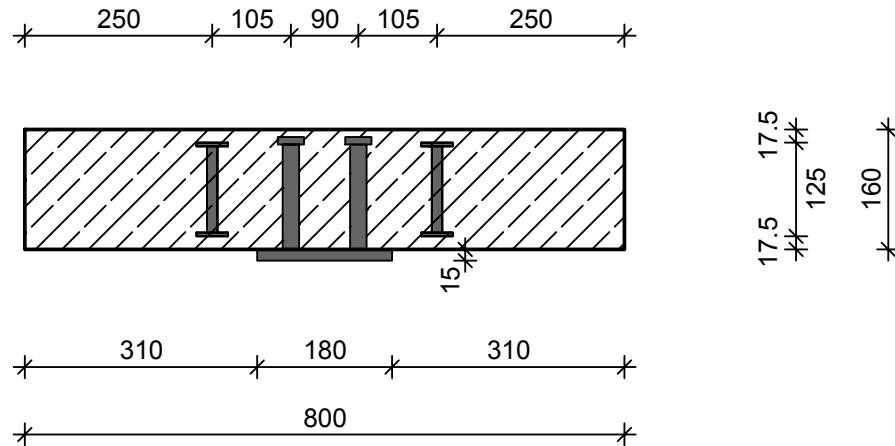
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

Ansicht



Schnitt A-A



Bewehrung nur unvollständig dargestellt.
Siehe auch Bewehrungsplan.

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B3 Versuchskörper

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

224

VERSUCHE

B3_P_D1

B3_0_D1

DATUM

07.07.2011

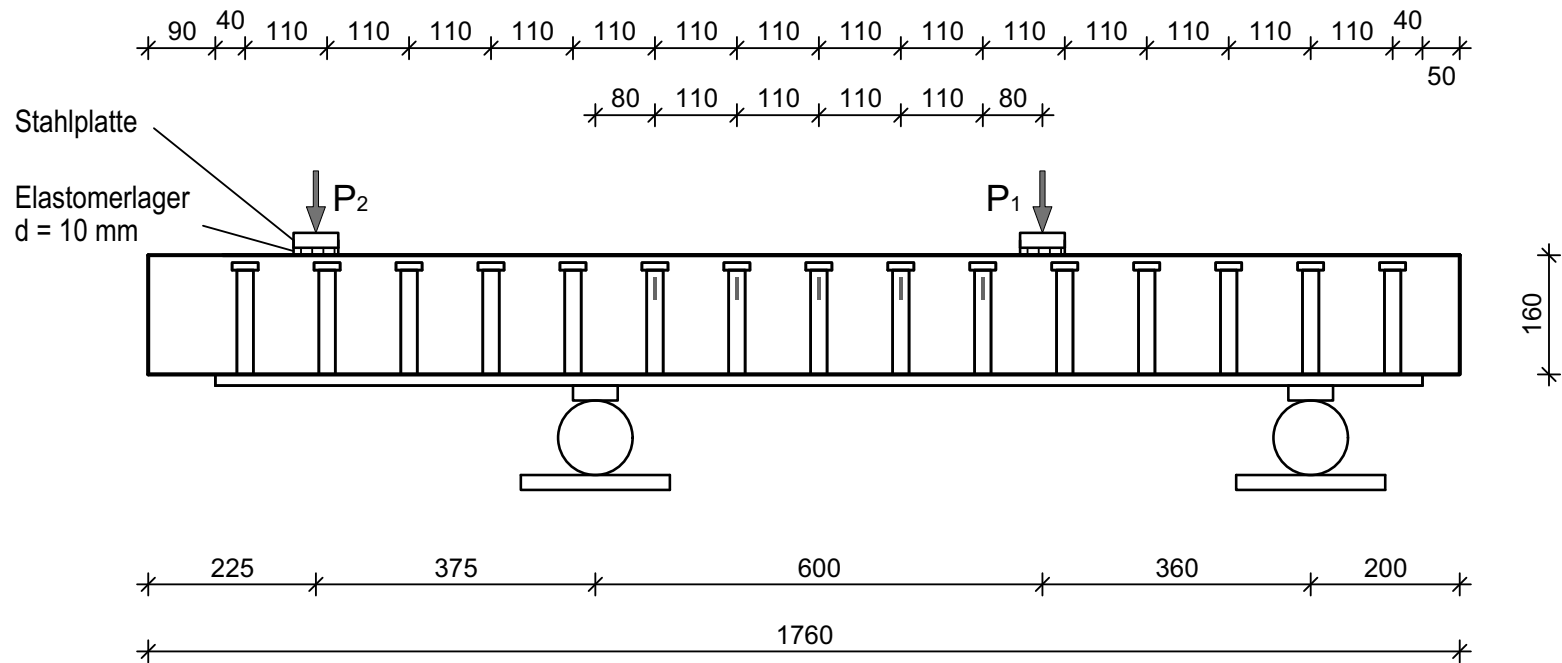


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chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de

Ansicht



Doppelkopfkanker sind nicht dargestellt.

Alle Auflager und Lasten wirken auf der gesamten Breite des Versuchskörpers.

Erstellt mit einer Schulversion von Allplan

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B3 Versuchsaufbau

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

225

VERSUCHE

B3_P_D1

B3_O_D1

B3_P_D0

DATUM

10.07.2011



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Wissenschaftlicher Mitarbeiter

Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

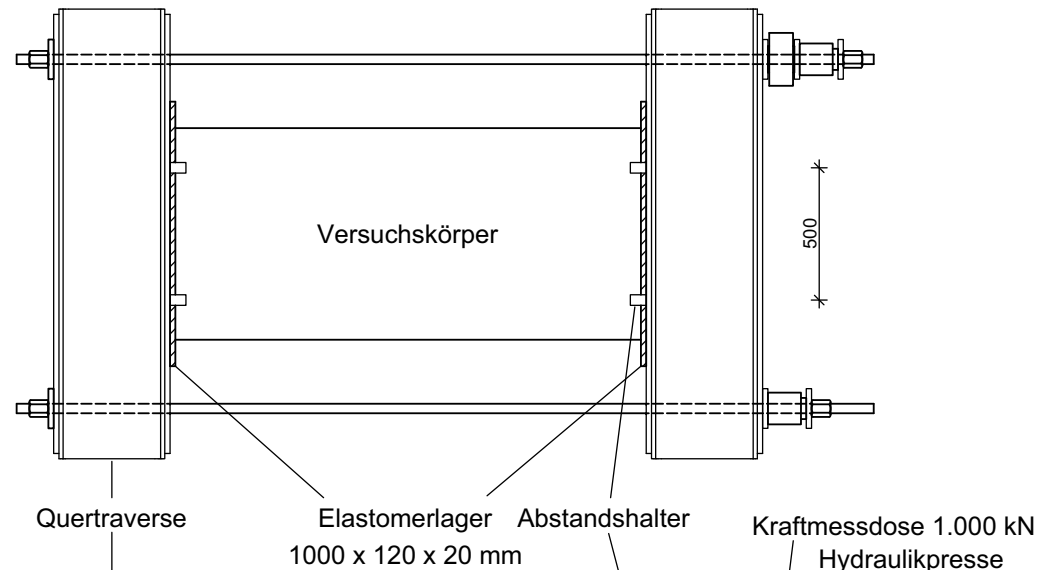
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Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de

H/B = 210.0 / 297.0 (0.06m²)

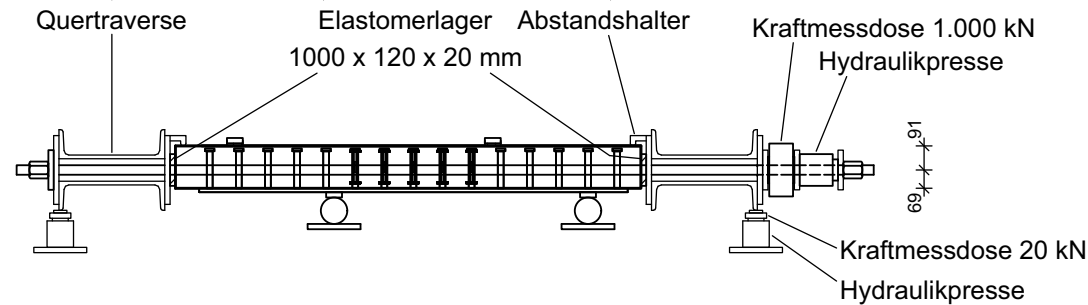
Allplan 2006


Aufbringung der Druckkraft

Draufsicht M 1:20



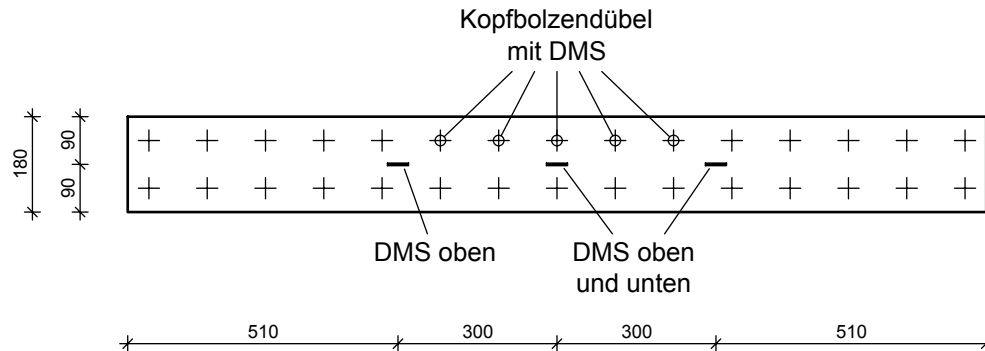
Ansicht M 1:20



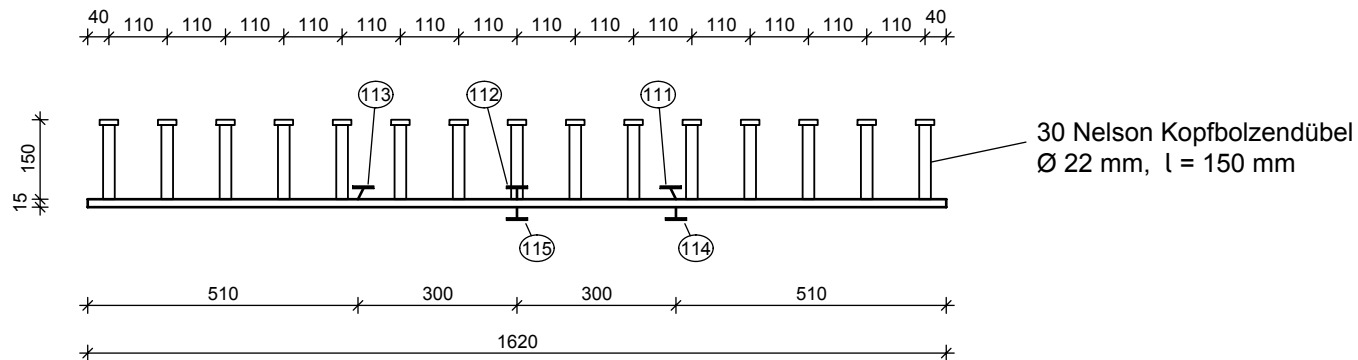
BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbbalzer@btkr.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B3_P_D1 B3_O_D1 B3_P_D0		
PLANINHALT		B3 Aufbringung Normalkraft		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:20	SCHN 771/4-1	226	10.07.2011	

Anordnung der DMS auf der Stahlplatte


Draufsicht M 1:10



Ansicht M 1:10



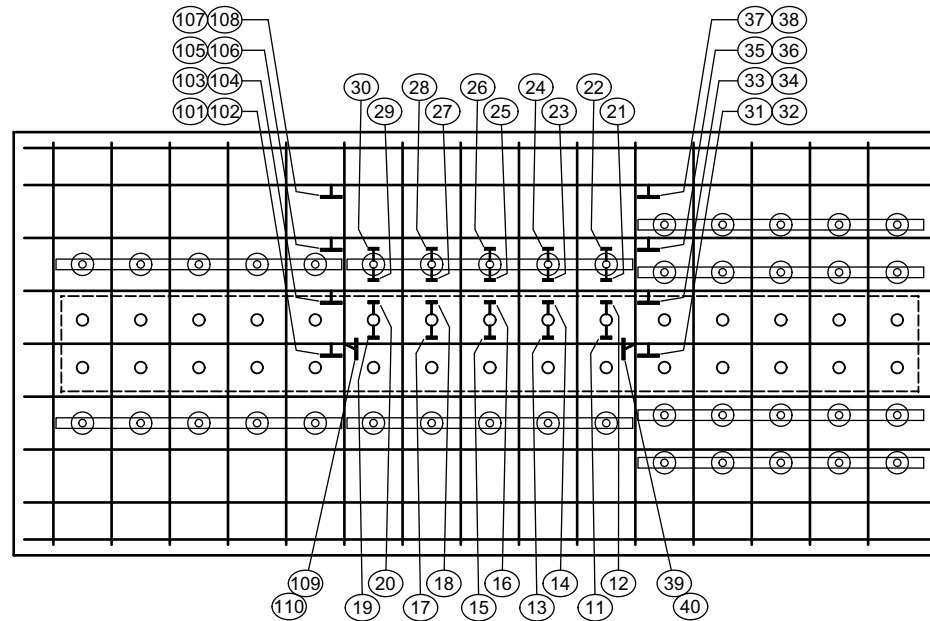
Die DMS, die auf anderen Bauteilen des Versuchskörpers appliziert sind, sind in Plan Nr. 228 bzw. Plan Nr. 248 dargestellt.

BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trhk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B3 Messtechnik - DMS				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	227	07.07.2011	

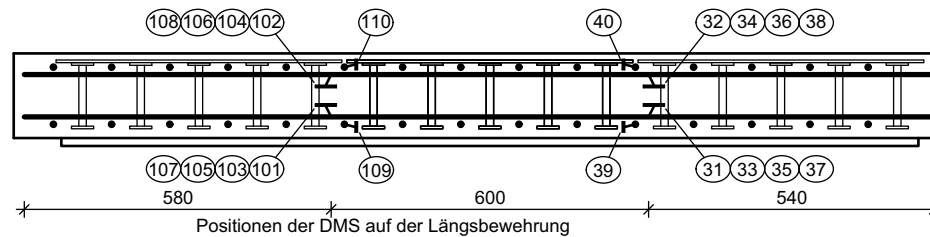
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

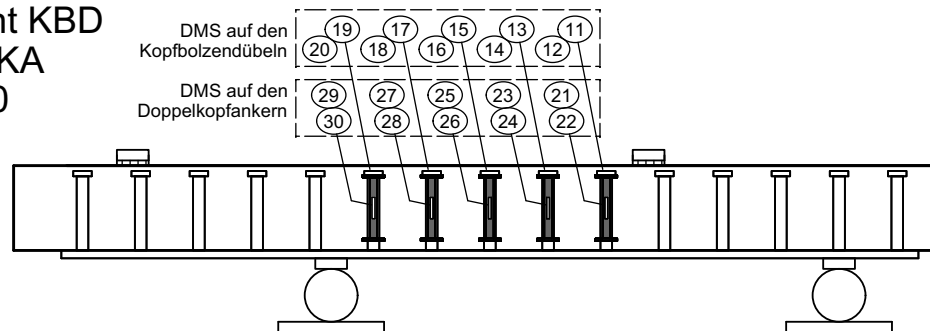
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



Ansicht KBD und DKA M 1:10

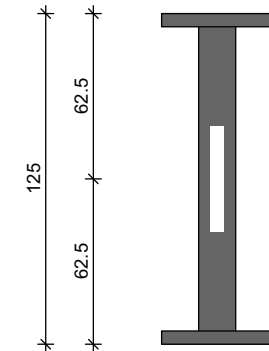
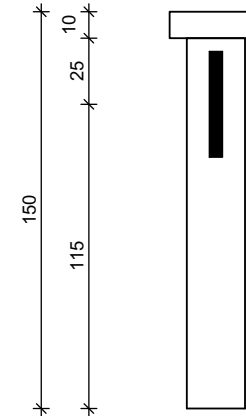


Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.


Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

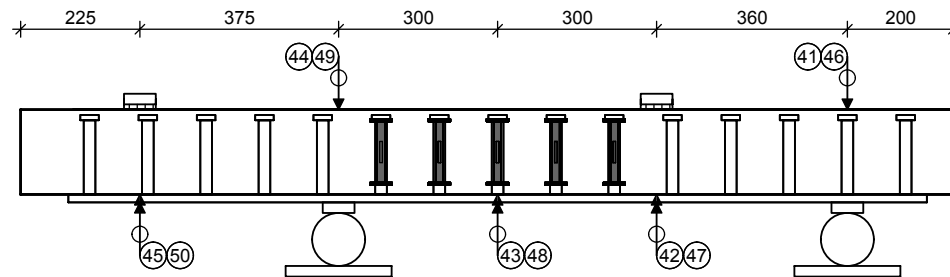
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkankern	21 - 30
DMS auf Längsbewehrung	31 - 38 und 101 - 108
DMS auf Querbewehrung	39 - 40 und 109 - 110
DMS auf Stahlplatte (s. Plan Nr. 227)	111 - 115

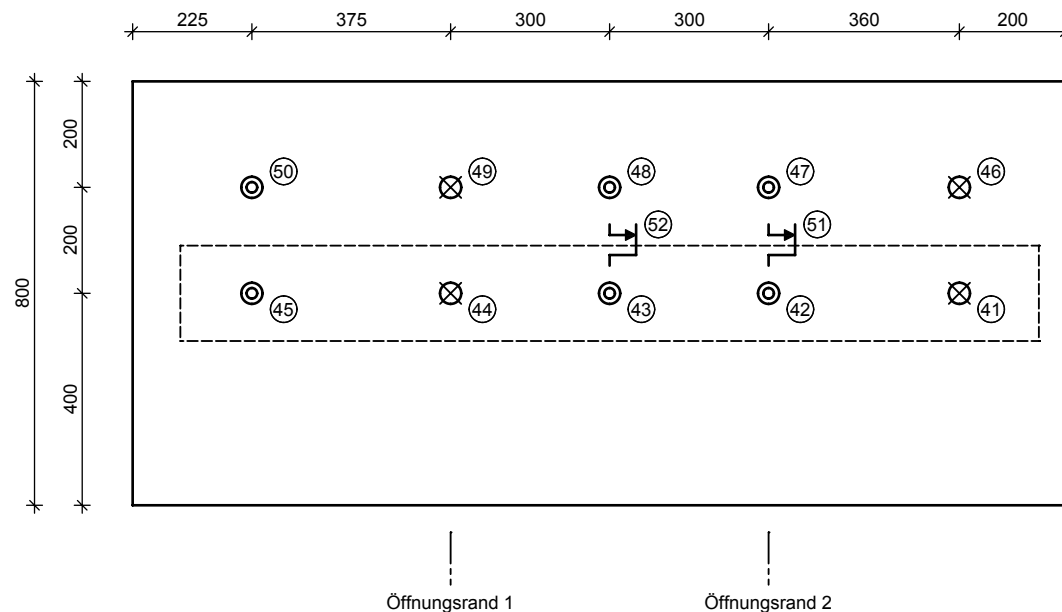
BAUHERR / OBJEKT			VERSUCHE		 <div>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</div> <div>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</div> <div>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</div> <div>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@thnk.uni-kl.de www.massivbau-kl.de</div>
DFG - Verbundträger mit Dübelleisten			B3_P_D1 B3_0_D1		
PLANINHALT			B3 Messtechnik - DMS		
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:2, 1:10	SCHN 771/4-1	228	10.07.2011		

Anordnung der Wegaufnehmer

Ansicht M 1:10




Draufsicht M 1:10

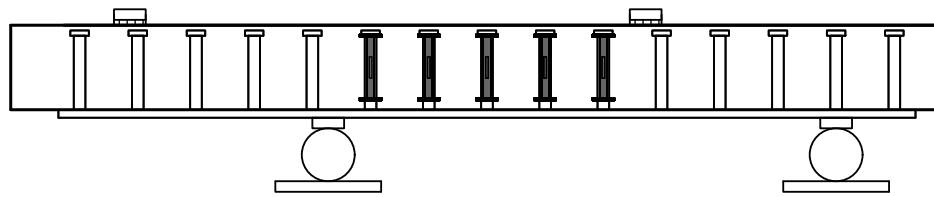


- ⊗ Wegaufnehmer misst von oben auf Versuchskörper
- ⊙ Wegaufnehmer misst von unten auf Versuchskörper
- └ Wegaufnehmer misst Relativverschiebung zwischen Stahlträger und Beton an der Unterseite des Versuchskörpers

Weg- aufnehmer	Messlänge
41 44 46 49 51 52	10 mm
42 43 47 48	40 mm
45 50	100 mm

Der Versuchskörper B3_P_D0 ist schmaler, der Versuchskörper B3_N_D1 länger als der hier abgebildete. Die Anordnung der Wegaufnehmer ist jedoch identisch.

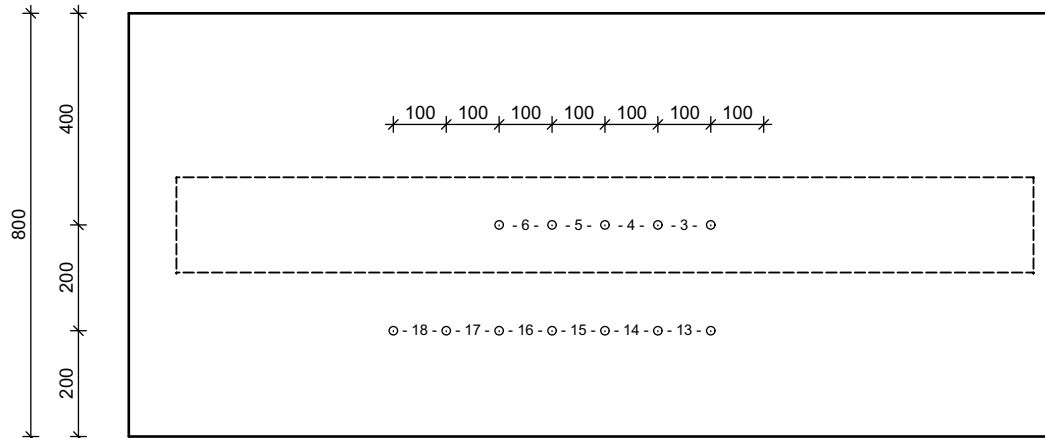
BAUHERR / OBJEKT			VERSUCHE		 <p>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</p> <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rhrk.uni-kl.de www.massivbau-kl.de</p>
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B3 Messtechnik - Wegaufnehmer					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	229	07.07.2011		



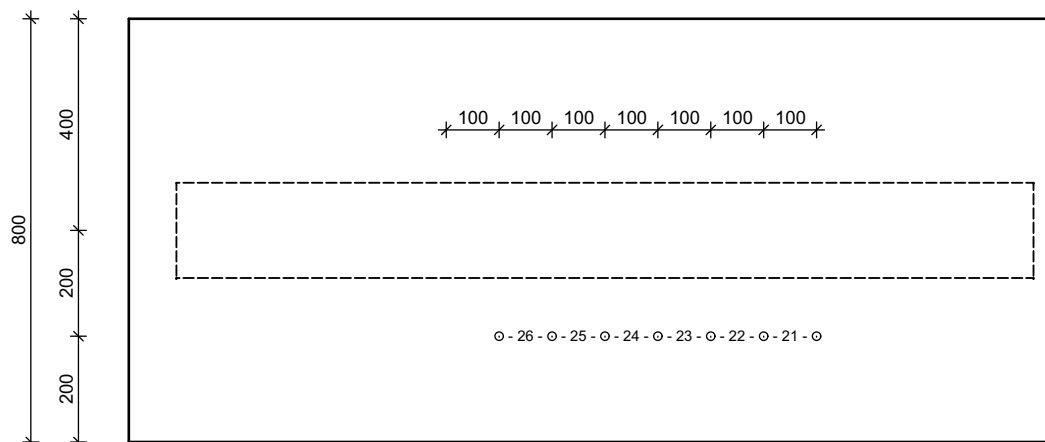
Ansicht
Versuchsaufbau
M 1:10

Anordnung der Setzdehnungs- messpunkte

225 375 300 300 360 200




Draufsicht
Punkte auf Oberseite
M 1:10



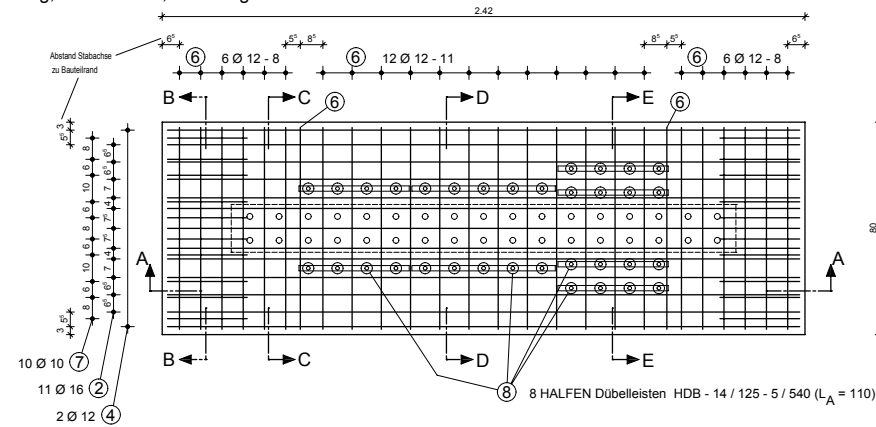
Draufsicht
Punkte auf Unterseite
M 1:10

Öffnungsrand 1

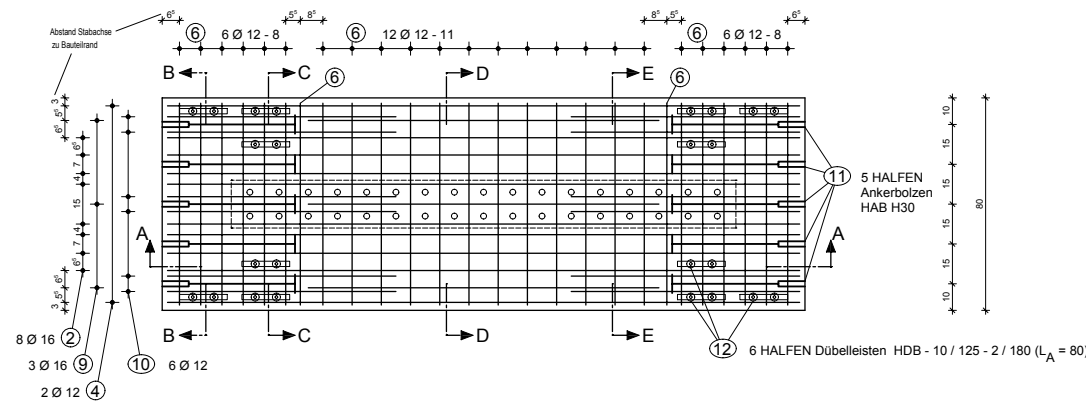
Öffnungsrand 2

BAUHERR / OBJEKT			VERSUCHE		 <div>TECHNISCHE UNIVERSITÄT KAISERSLAUTERN</div> <div>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</div> <div>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</div> <div>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbbalzer@rtrk.uni-kl.de www.massivbau-kl.de</div>
DFG - Verbundträger mit Dübelleisten			B3_P_D1 B3_O_D1 B3_N_D1 B3_P_D0		
PLANINHALT					
B3 Messtechnik - Setzdehnungsmesser					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	230	10.07.2011		

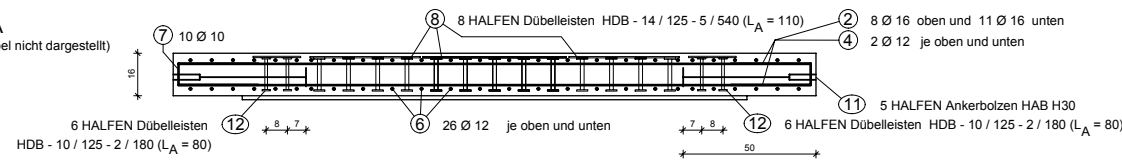
Draufsicht
Obere Bewehrung, Dübelleisten, Steckbügel



Draufsicht
Untere Bewehrung, Ankerbolzen mit Dübelleisten



Schnitt A-A
(Kopfbolzendübel nicht dargestellt)



Stahlauszüge

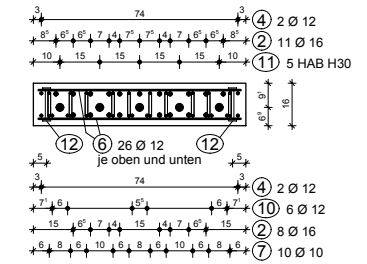
②	19 Ø 16	l = 238 cm
④	4 Ø 12	l = 238 cm
⑥	52 Ø 12	l = 76 cm
⑦	20 Ø 10	l = 69 cm
⑨	3 Ø 16	l = 132 cm
⑩	6 Ø 12	l = 86 cm

⑪ 10 HALBEN Ankerbolzen HAB H30 l = 50 cm
inkl. Gewindemuffe M32 x 3
Kopfdurchmesser d = 7 cm

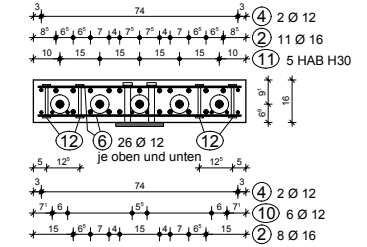
⑧ 8 HALBEN Dübelleisten
HDB - 14 / 125 - 5 / 540 (L_A = 110)
Durchmesser d = 14 mm
Ankerhöhe h = 125 mm
Ankerabstand L_A = 110 mm

⑫ 12 HALBEN Dübelleisten
HDB - 10 / 125 - 2 / 180 (L_A = 80)
Durchmesser d = 10 mm
Ankerhöhe h = 125 mm
Ankerabstand L_A = 80 mm

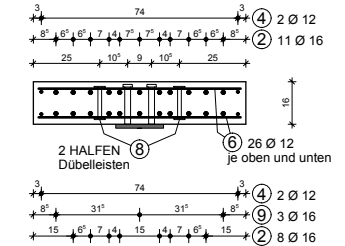
Schnitt B-B



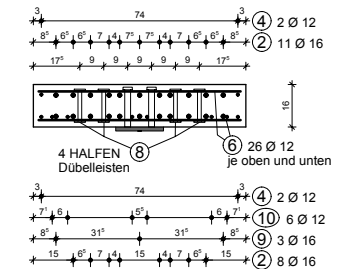
Schnitt C-C



Schnitt D-D




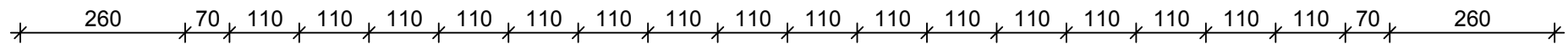
Schnitt E-E



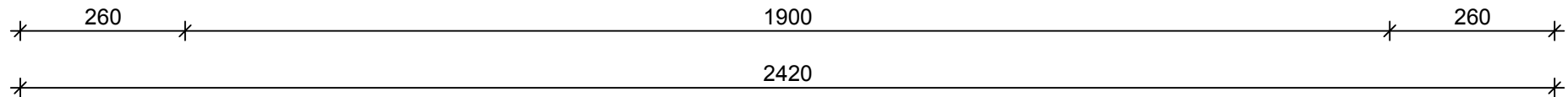
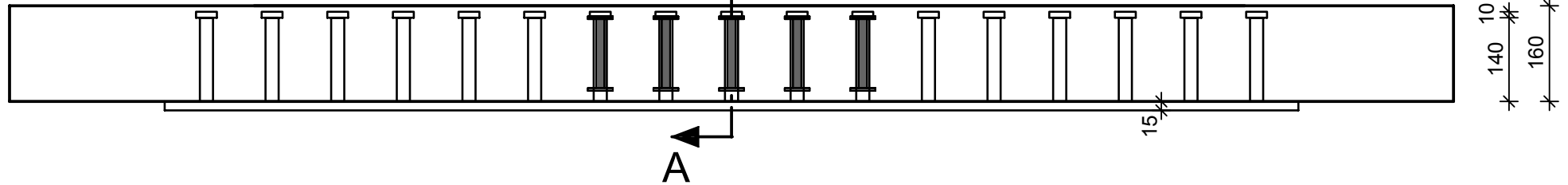
Betondeckung: c_{nom} = 2 cm an jeder Stelle

alle Maße in cm

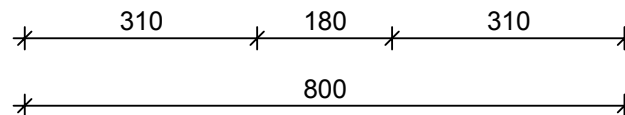
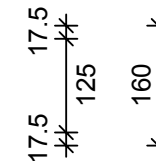
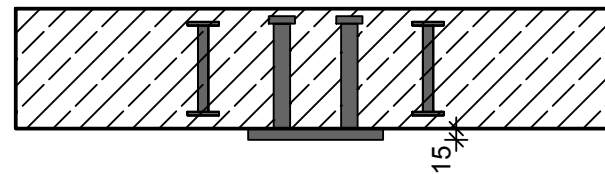
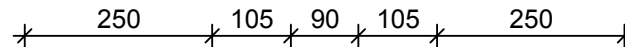
BAUHERR / OBJEKT	VER such	 Dipl.-Ing. Christian Balzer Fachgebiet Bauwerk- und Bauteilmechanik Technische Universität Kaiserslautern Postfach 3040, 67661 Kaiserslautern Telefon: +49 (0)631 / 205-3193 Telefax: +49 (0)631 / 205-3885 e-mail: christian.balzer@tu-kl.de
DFG - Verbundträger mit Dübelleisten	B3_N_01	
PLANINHALT		
B3 Bewehrung		
MASSTAB	PROJEKT-NR.	PLAN-NR.
1:10	SCHN 771/4-1	233
	DATUM	
	09.07.2011	



Ansicht



Schnitt A-A



Bewehrung nur unvollständig dargestellt.
Siehe auch Bewehrungsplan.

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B3 Versuchskörper

VERSUCHE

B3_N_D1

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

234

DATUM

09.07.2011

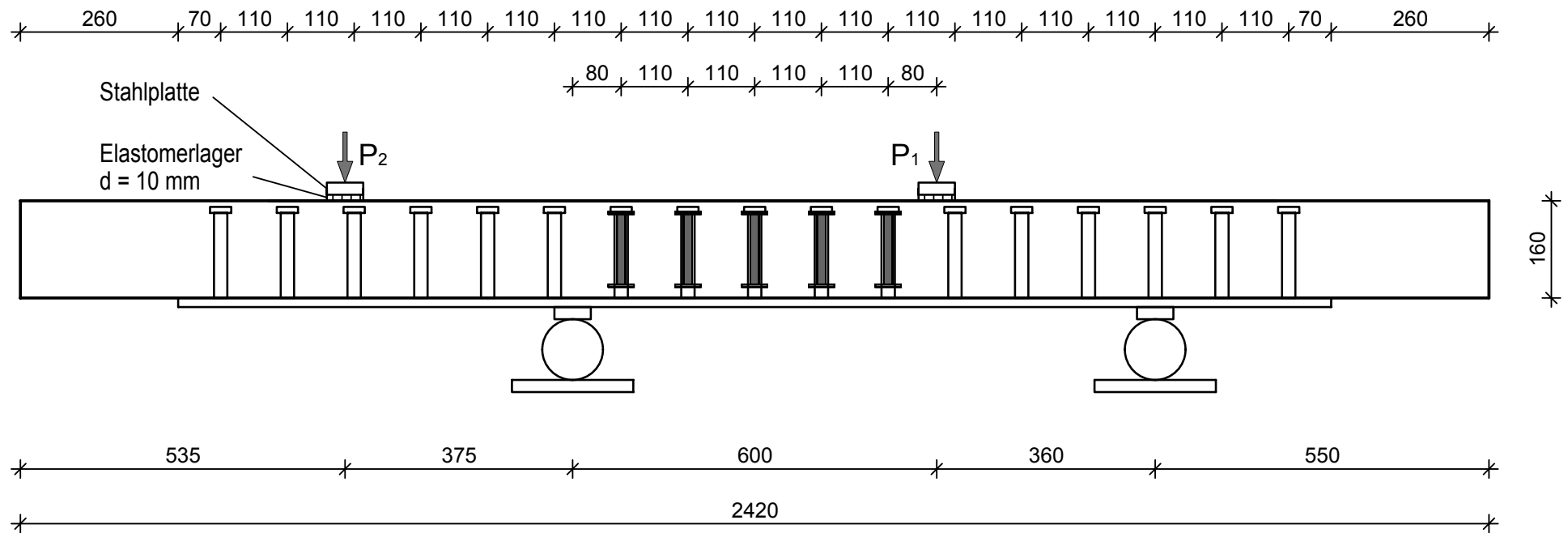


Dipl.-Ing. Christian Balzer
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chbalzer@rhrk.uni-kl.de
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Ansicht



Doppelkopfkanker sind nicht dargestellt.

Alle Auflager und Lasten wirken auf der gesamten Breite des Versuchskörpers.

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B3 Versuchsaufbau

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

235

VERSUCHE

B3_N_D1

DATUM

09.07.2011



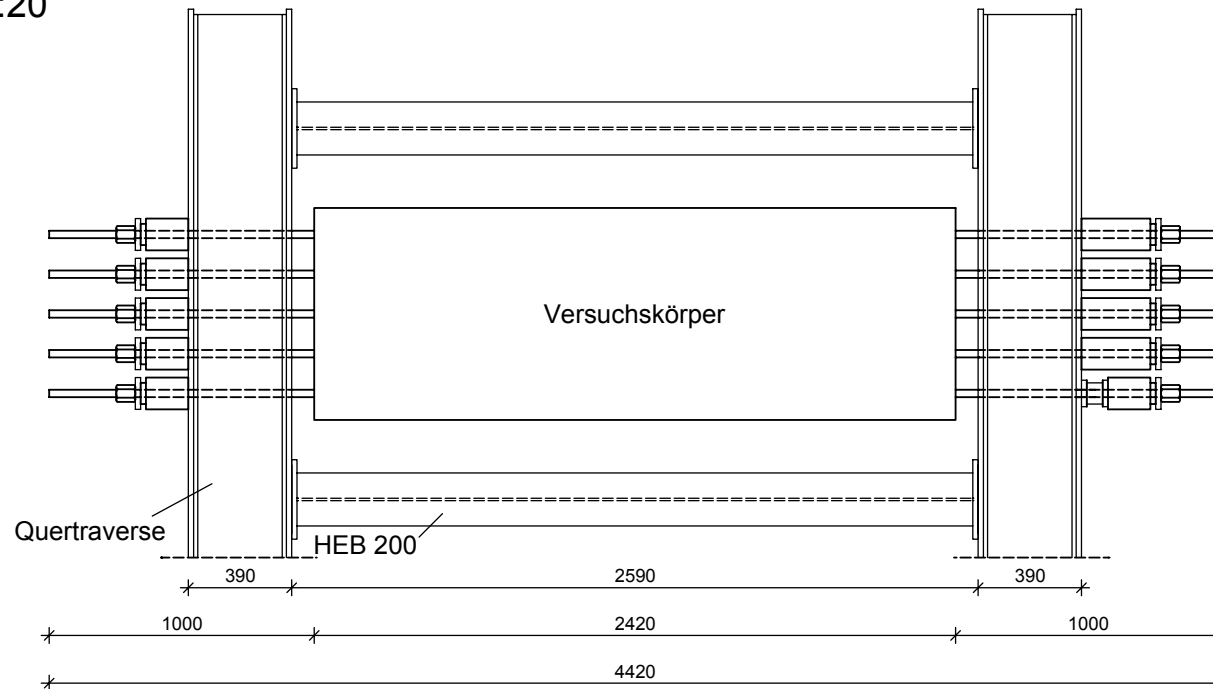
Dipl.-Ing. Christian Balzer
Wissenschaftlicher Mitarbeiter

Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

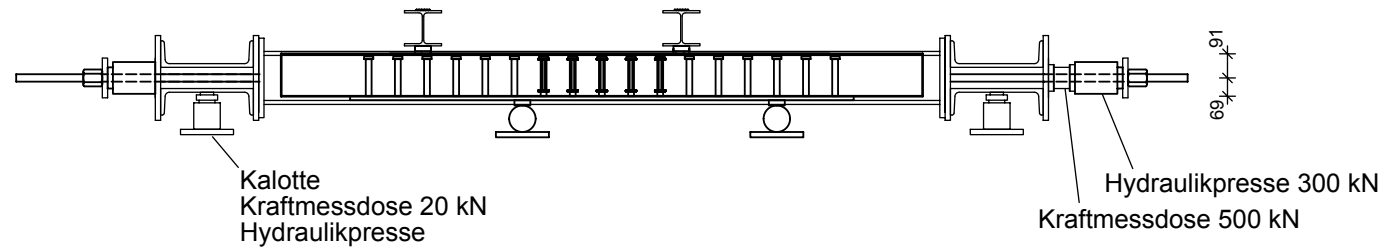
Telefon +49 (0)631 / 205-3193
Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de


Aufbringung der Zugkraft

Draufsicht M 1:20



Ansicht M 1:20



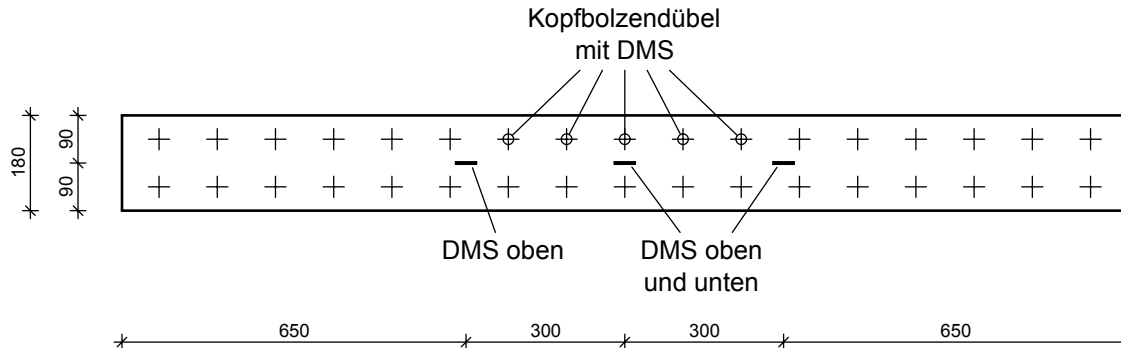
BAUHERR / OBJEKT		VERSUCHE		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rnh.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten		B3_N_D1		
PLANINHALT				
B3 Aufbringung Normalkraft				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:20	SCHN 771/4-1	236	09.07.2011	

H/B = 297.0 / 420.0 (0.12m²)

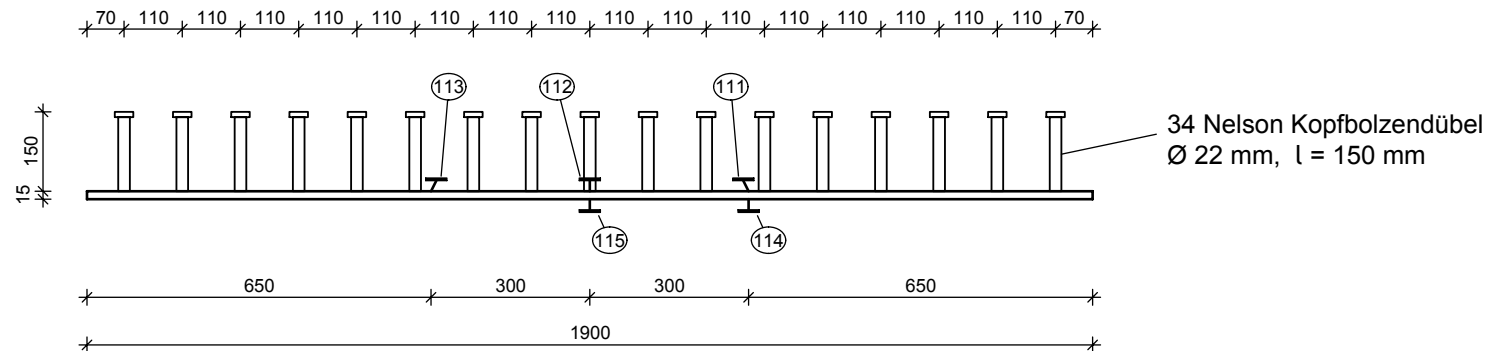
Allplan 2006

Anordnung der DMS auf der Stahlplatte


Draufsicht M 1:10



Ansicht M 1:10



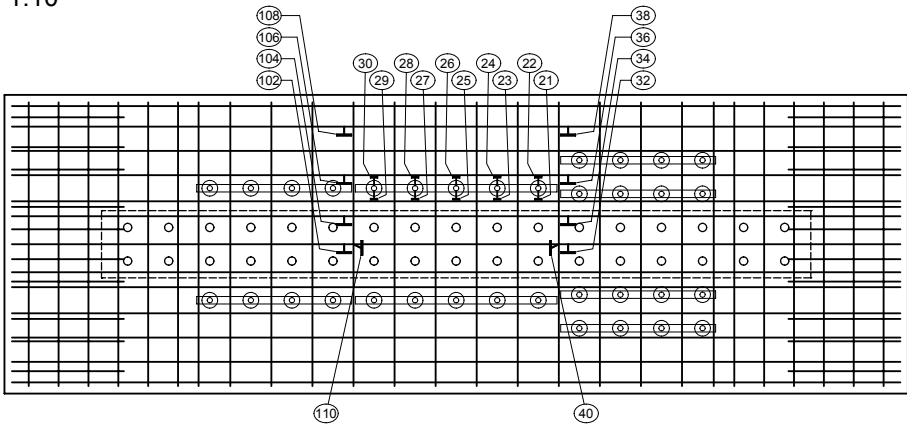
Die DMS, die auf anderen Bauteilen des Versuchskörpers appliziert sind, sind in Plan Nr. 238 dargestellt.

BAUHERR / OBJEKT		VERSUCHE B3_N_D1		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@trnk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B3 Messtechnik - DMS				
MASSTAB 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 237	DATUM 09.07.2011	

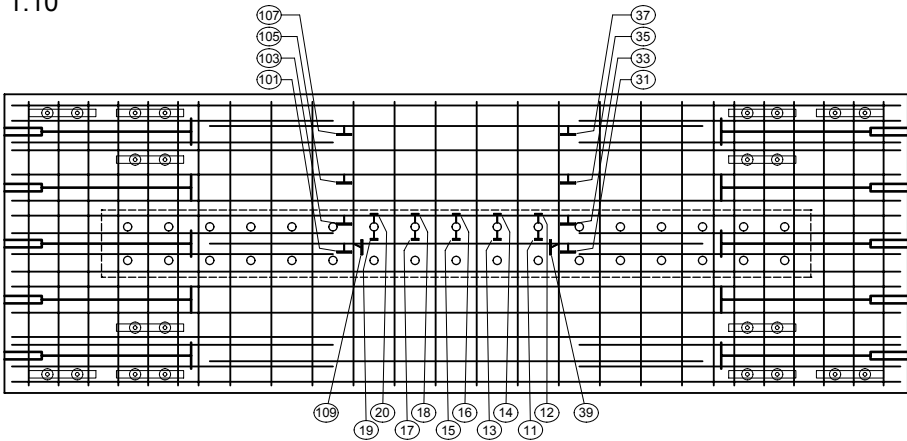
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

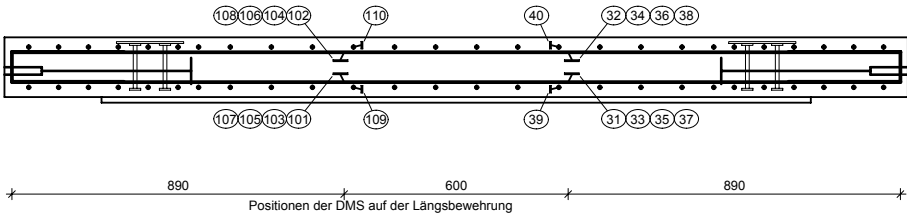
Draufsicht
DMS auf oberer Bewehrung und Dübelleisten
M 1:10



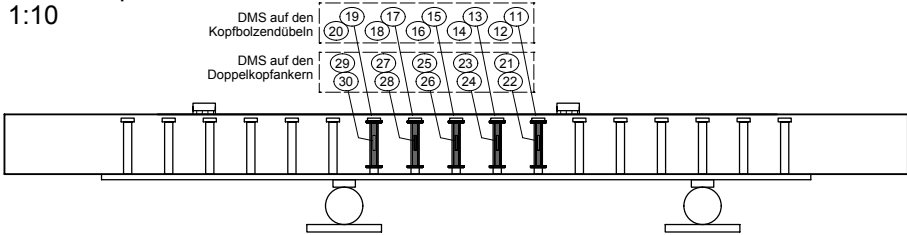
Draufsicht
DMS auf unterer Bewehrung und Kopfbolzendübeln
M 1:10



Ansicht
DMS auf Bewehrung
M 1:10



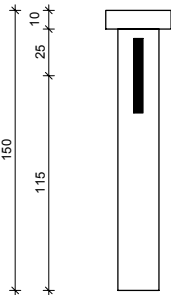
Ansicht
DMS auf Kopfbolzendübeln und Dübelleisten
M 1:10



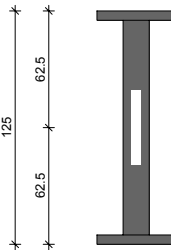
Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.

Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.




Bei Doppelkopfkankern werden die DMS in der Mitte der Anker angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

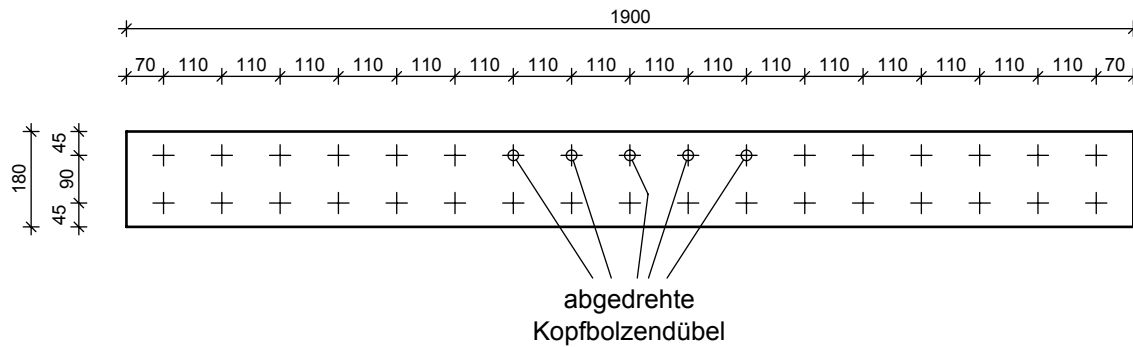
Liste der Dehnungsmessstreifen

DMS auf Kopfbolzendübeln	11 - 20
DMS auf Doppelkopfkankern	21 - 30
DMS auf Längsbewehrung	31 - 38 und 101 - 108
DMS auf Querbewehrung	39 - 40 und 109 - 110
DMS auf Stahlplatte (s. Plan Nr. 237)	111 - 115

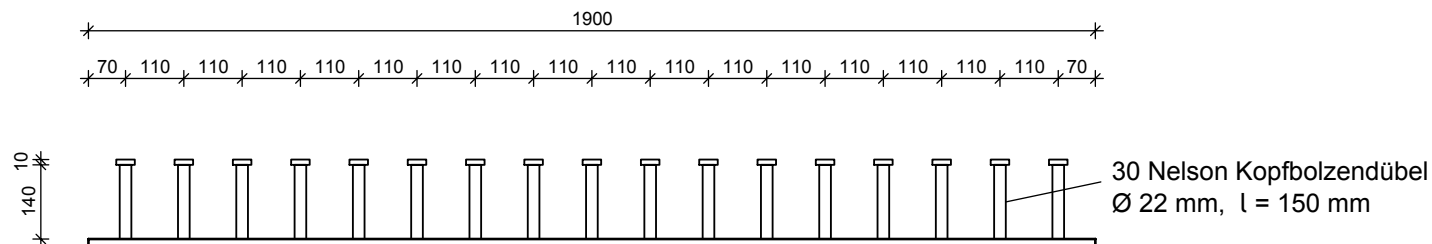
BAUHERR / OBJEKT		VERSUCHE		 <p>Technische Universität KAISERSLAUTERN</p> <p>Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter</p> <p>Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern</p> <p>Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@trmk.uni-kl.de www.massivbau.kl.de</p>
DFG - Verbundträger mit Dübelleisten		B3_N_D1		
PLANINHALT				
B3 Messtechnik - DMS				
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM	
1:10	SCHN 771/4-1	238	09.07.2011	


Anordnung der Kopfbolzendübel

Draufsicht M 1:10

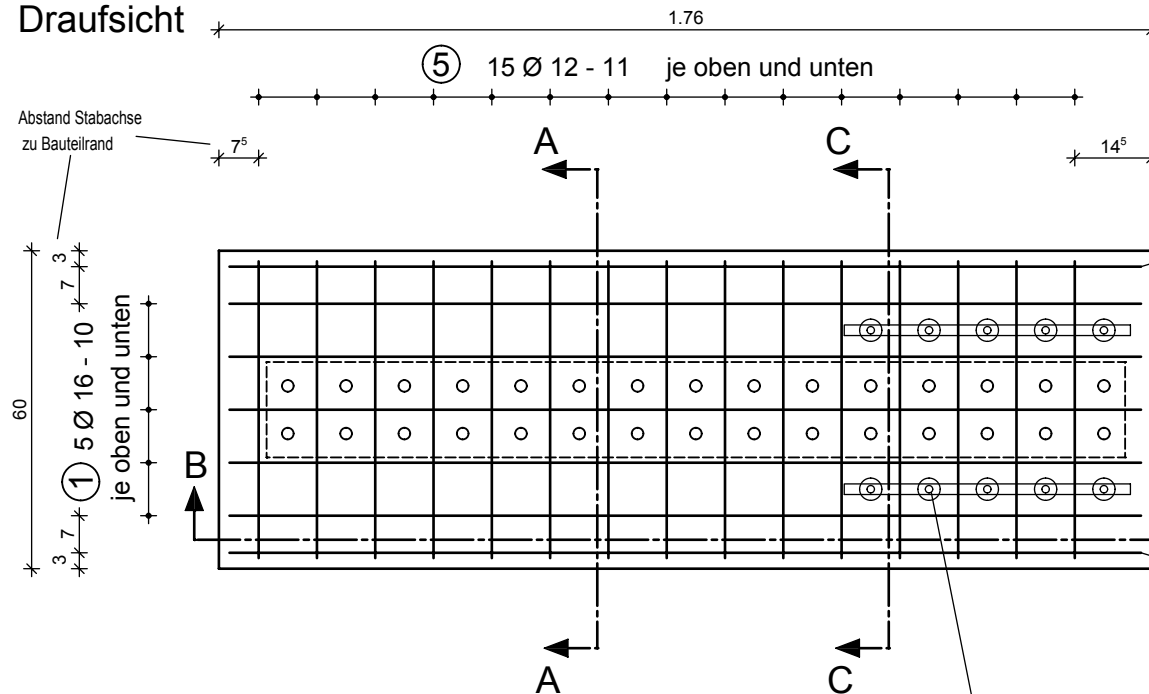


Ansicht M 1:10

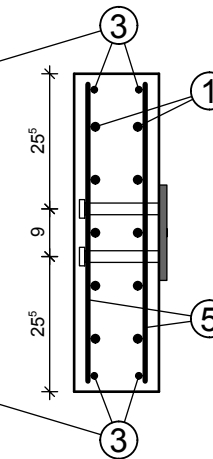


BAUHERR / OBJEKT			VERSUCHE B3_N_D1		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 c.balzer@rhrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B3 Anordnung der Kopfbolzendübel					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	242	09.07.2011		

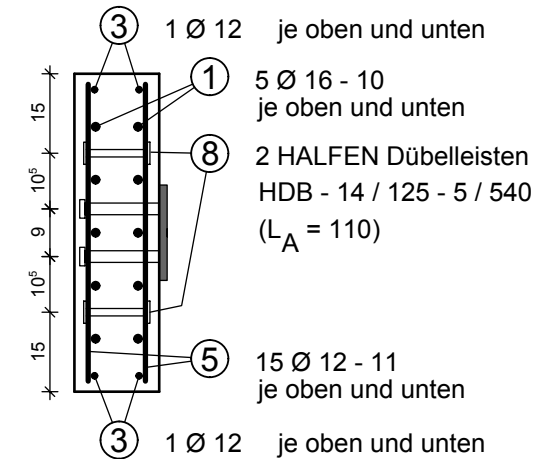
Draufsicht



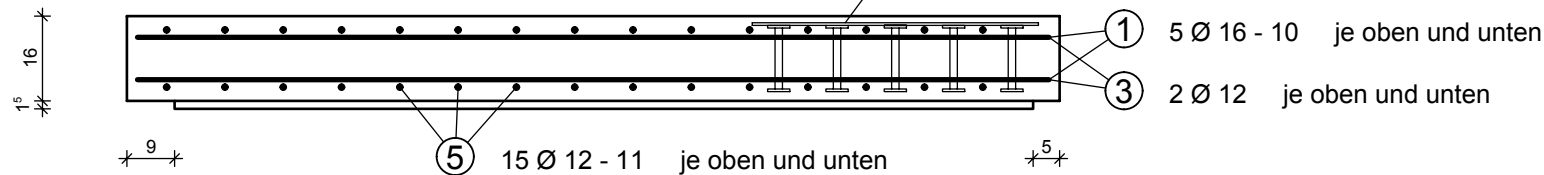
Schnitt A-A



Schnitt C-C



Schnitt B-B (Kopfbolzendübel nicht dargestellt)

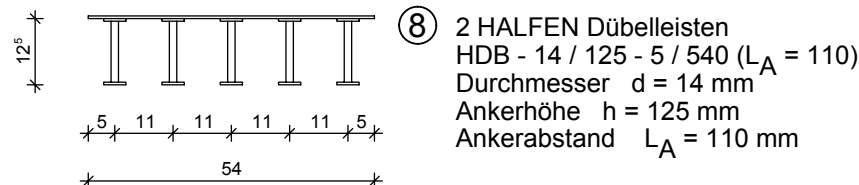


Stahlauszüge

⑤ 30 Ø 12 $l = 56$ cm


① 10 Ø 16 $l = 172$ cm

③ 4 Ø 12 $l = 172$ cm



Betondeckung: $c_{nom} = 2$ cm an jeder Stelle

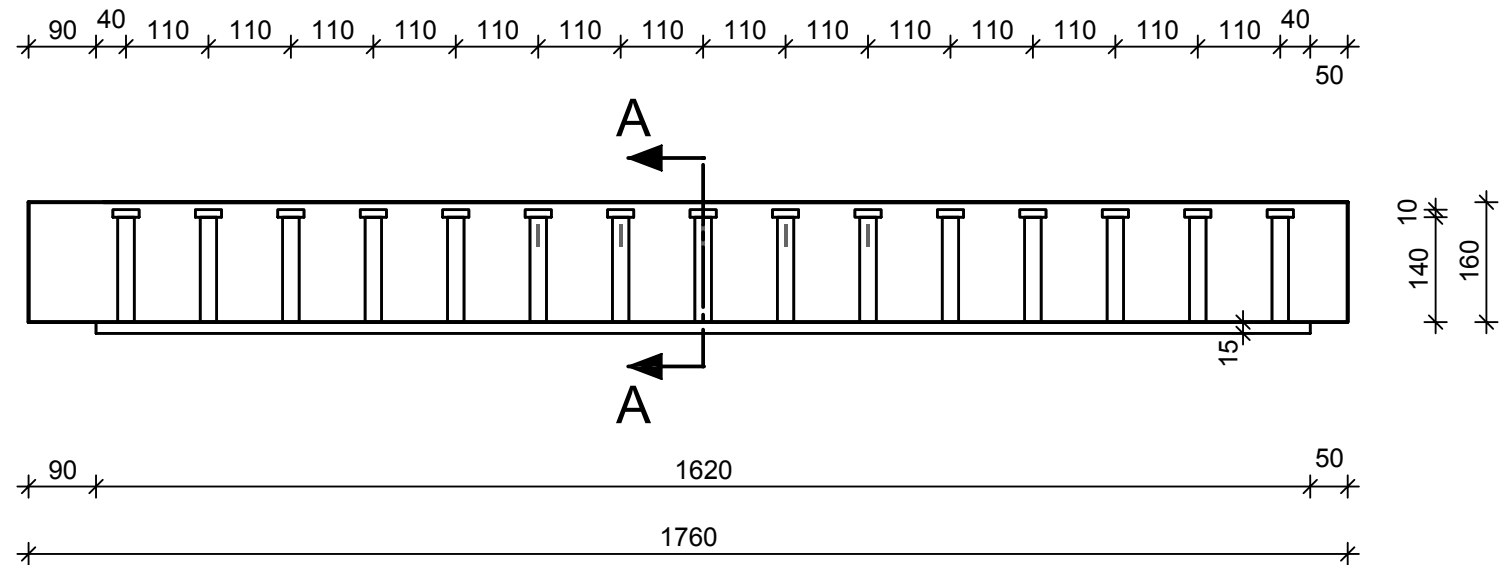
alle Maße in cm

BAUHERR / OBJEKT			VERSUCHE B3_P_D0		 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 chbalzer@thrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten					
PLANINHALT					
B3 Bewehrung					
MASSTAB	PROJEKT-NR.	PLAN-NR.	DATUM		
1:10	SCHN 771/4-1	243	09.07.2011		

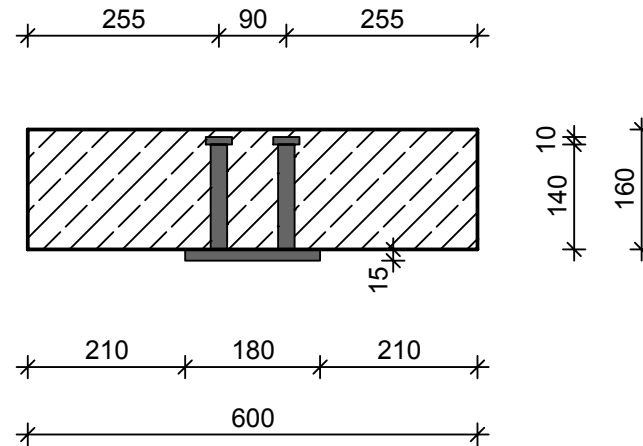
H/B = 297.0 / 420.0 (0.12m²)

Allplan 2006

Ansicht



Schnitt A-A



Bewehrung nur unvollständig dargestellt.
Siehe auch Bewehrungsplan.

BAUHERR / OBJEKT

DFG - Verbundträger mit Dübelleisten

PLANINHALT

B3 Versuchskörper

VERSUCHE

B3_P_D0

MASSTAB

1:10

PROJEKT-NR.

SCHN 771/4-1

PLAN-NR.

244

DATUM

09.07.2011

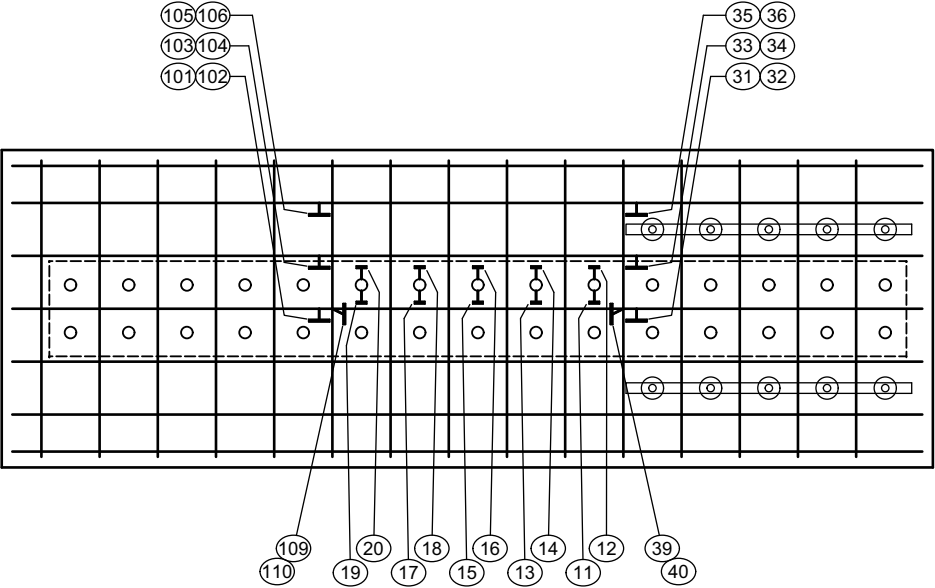
**TECHNISCHE UNIVERSITÄT
KAISERSLAUTERN**

Dipl.-Ing. Christian Balzer
Wissenschaftlicher Mitarbeiter

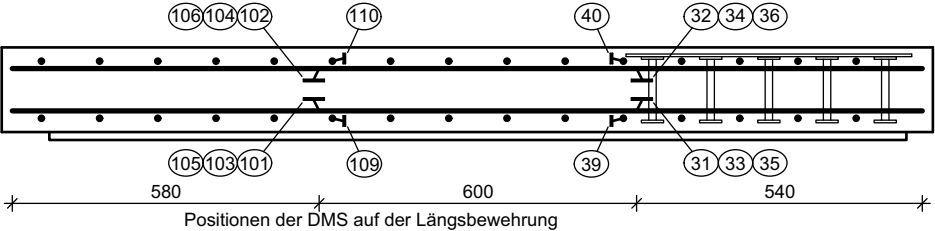
Technische Universität Kaiserslautern
Fachgebiet Massivbau und Baukonstruktion
Gottlieb-Daimler-Straße
Gebäude 60, Raum 304
D-67663 Kaiserslautern

Telefon +49 (0)631 / 205-3193
Telefax +49 (0)631 / 205-3555
chbalzer@rhrk.uni-kl.de
www.massivbau-kl.de

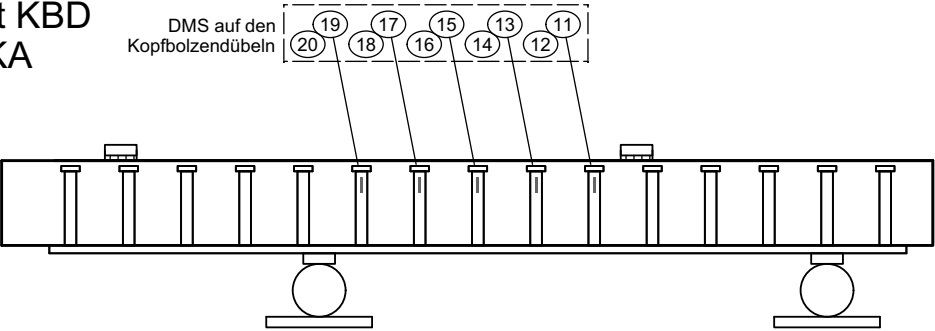
Draufsicht M 1:10



Ansicht Bewehrung M 1:10



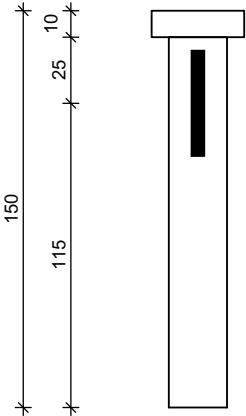
Ansicht KBD und DKA M 1:10



Anordnung der DMS

Auf der Bewehrung werden die DMS seitlich angeordnet.


Bei Kopfbolzendübeln werden die DMS 25 mm unterhalb des Kopfes angeordnet.



Die Kopfbolzendübel und Doppelkopfkanker werden im Bauteil so angeordnet, dass die DMS zur Seite zeigen.

Liste der Dehnungsmessstreifen

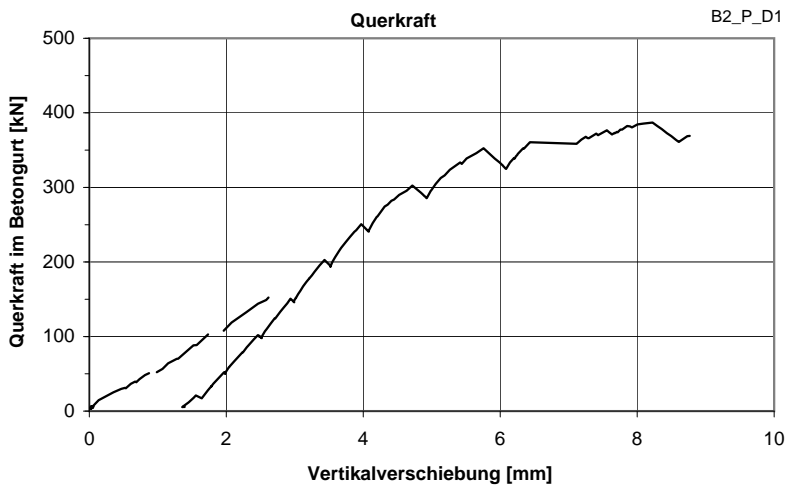
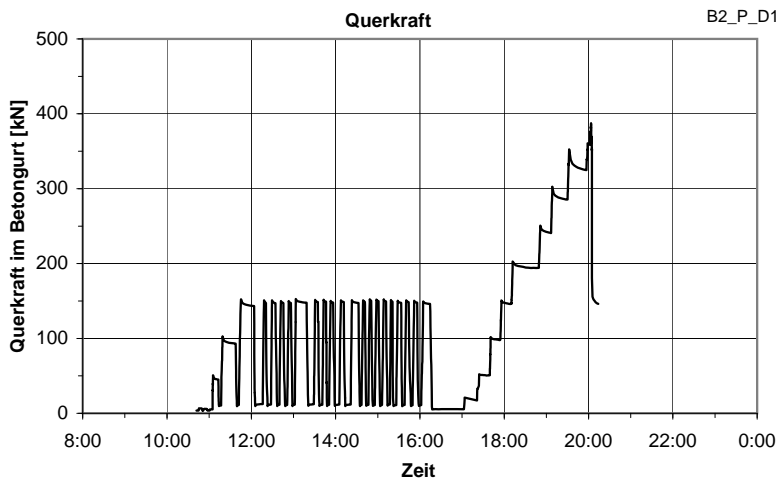
DMS auf Kopfbolzendübeln	11 - 20
DMS auf Längsbewehrung	31 - 36 und 101 - 106
DMS auf Querbewehrung	39 - 40 und 109 - 110
DMS auf Stahlplatte (s. Plan Nr. 227)	111 - 115

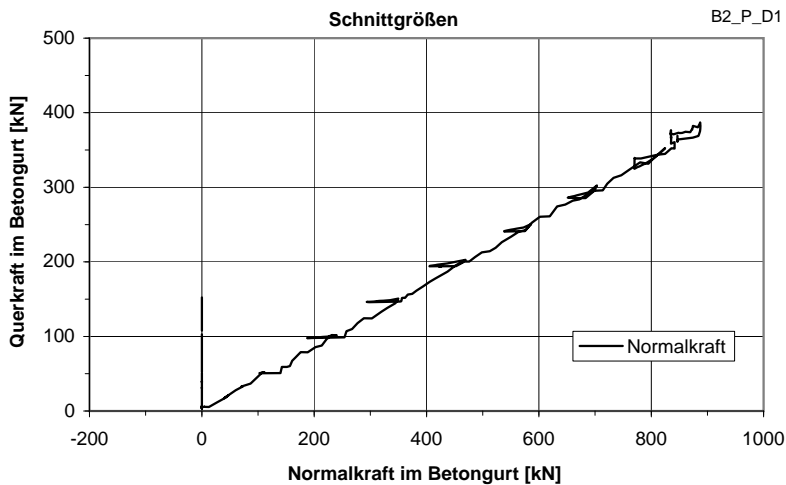
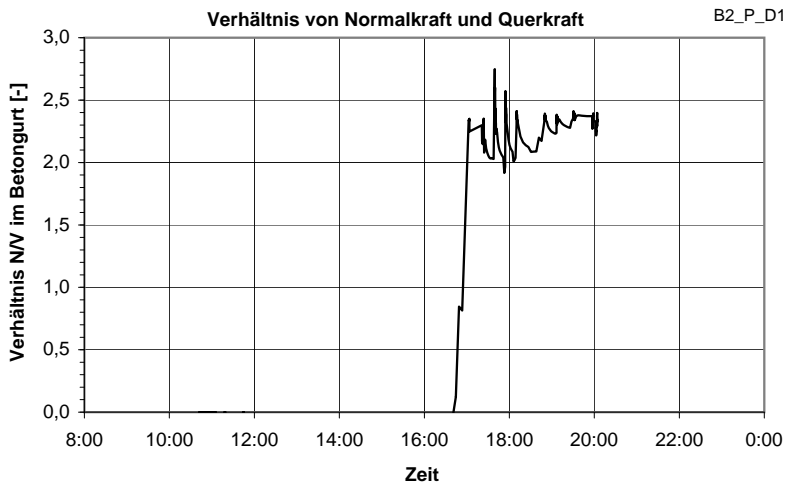
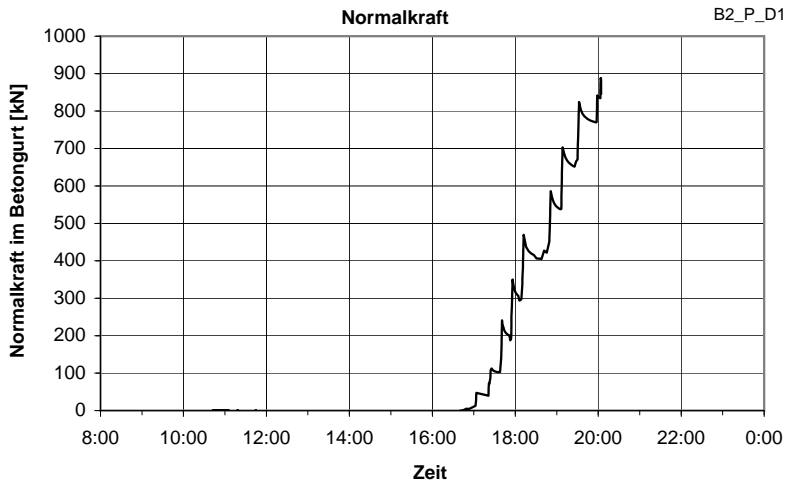
BAUHERR / OBJEKT			VERSUCHE B3_P_D0	 TECHNISCHE UNIVERSITÄT KAISERSLAUTERN Dipl.-Ing. Christian Balzer Wissenschaftlicher Mitarbeiter Technische Universität Kaiserslautern Fachgebiet Massivbau und Baukonstruktion Gottlieb-Daimler-Straße Gebäude 60, Raum 304 D-67663 Kaiserslautern Telefon +49 (0)631 / 205-3193 Telefax +49 (0)631 / 205-3555 cbbalzer@rtrk.uni-kl.de www.massivbau-kl.de
DFG - Verbundträger mit Dübelleisten				
PLANINHALT				
B3 Messtechnik - DMS				
MASSTAB 1:2, 1:10	PROJEKT-NR. SCHN 771/4-1	PLAN-NR. 248	DATUM 10.07.2011	

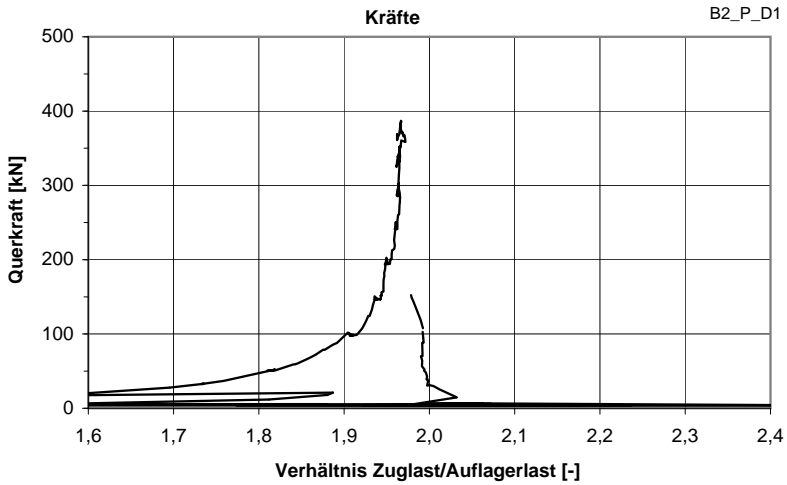
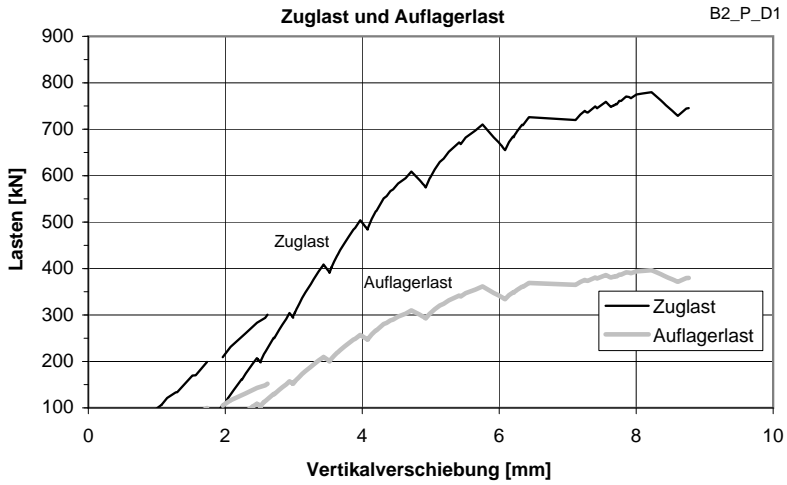
B. Diagramme der Versuchsmesswerte

B.1. Versuch B1_P_D1

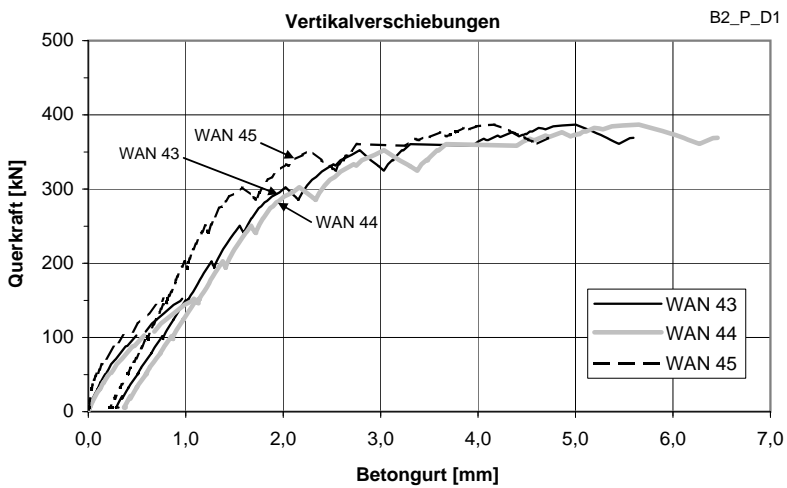
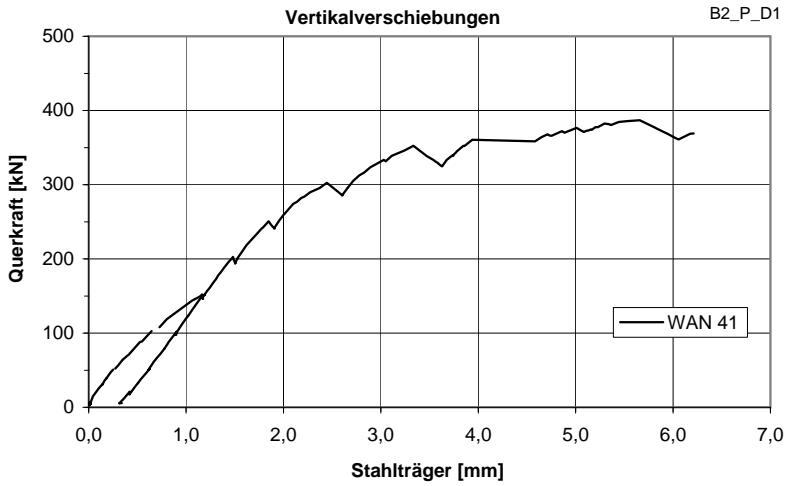
B.1.1. Kräfte

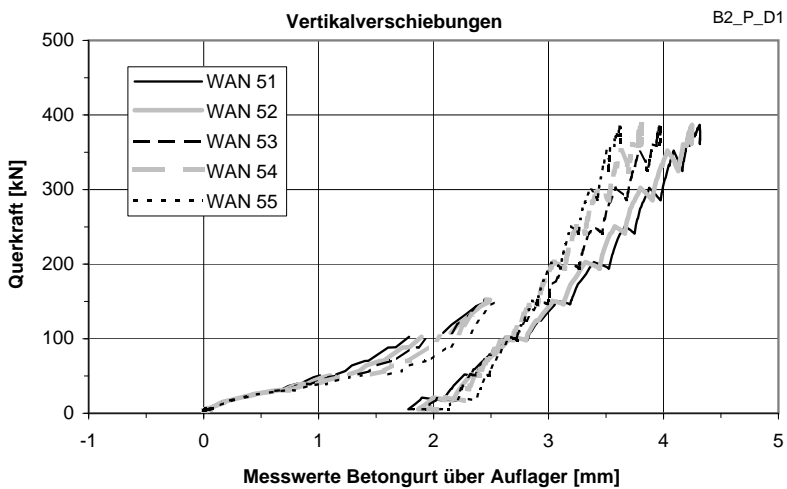
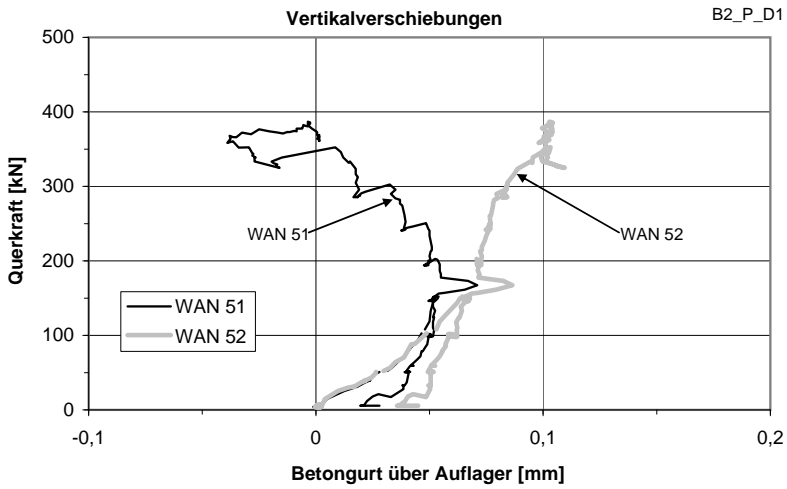
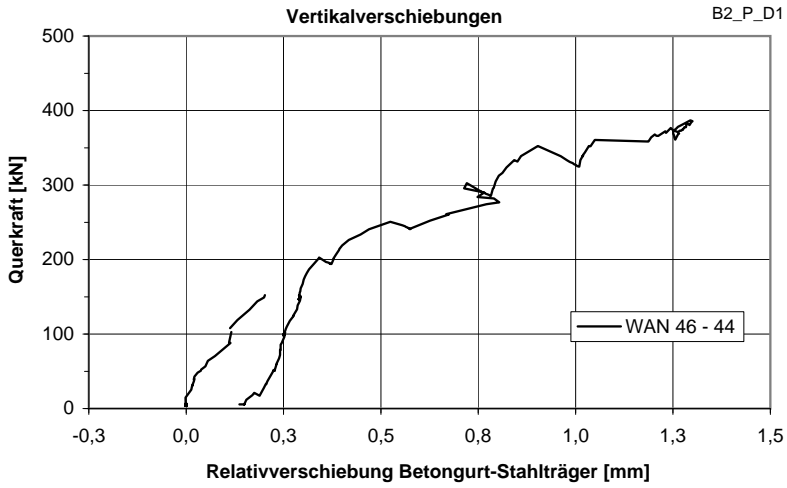




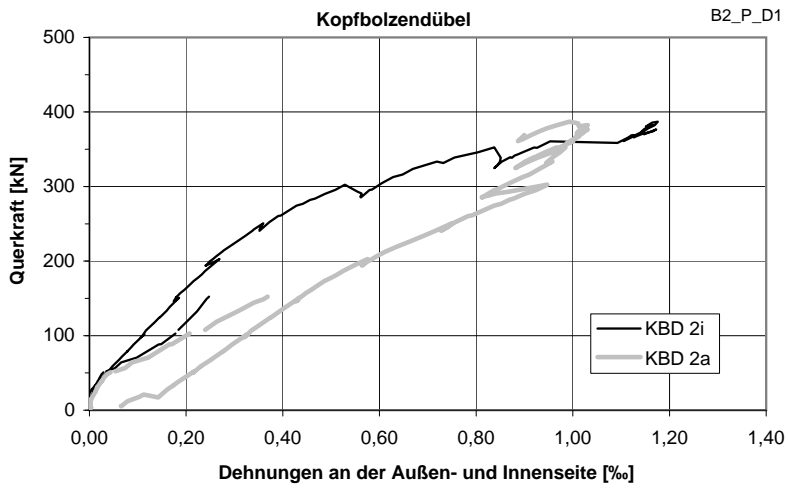
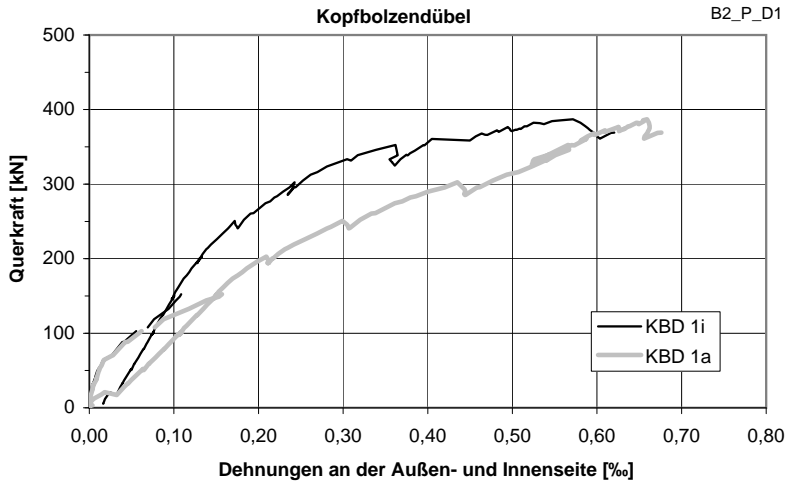


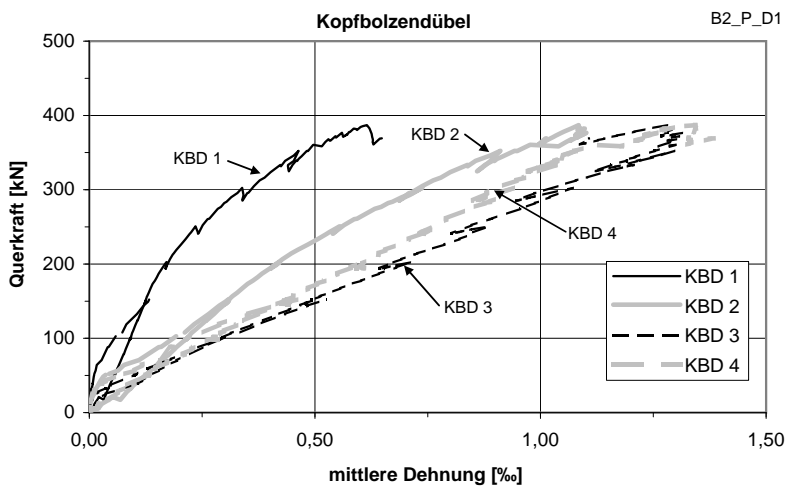
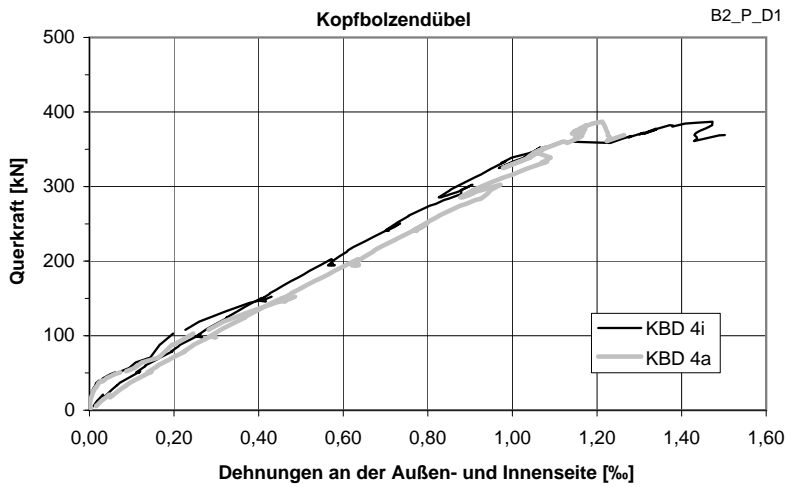
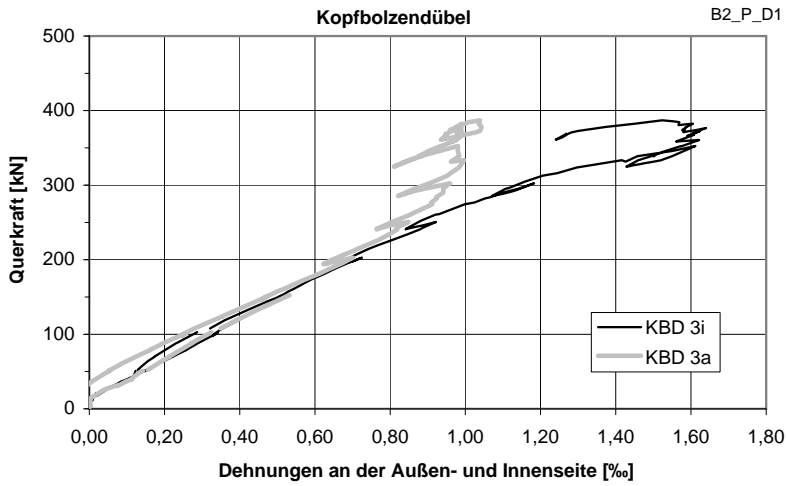
B.1.2. Verformungen

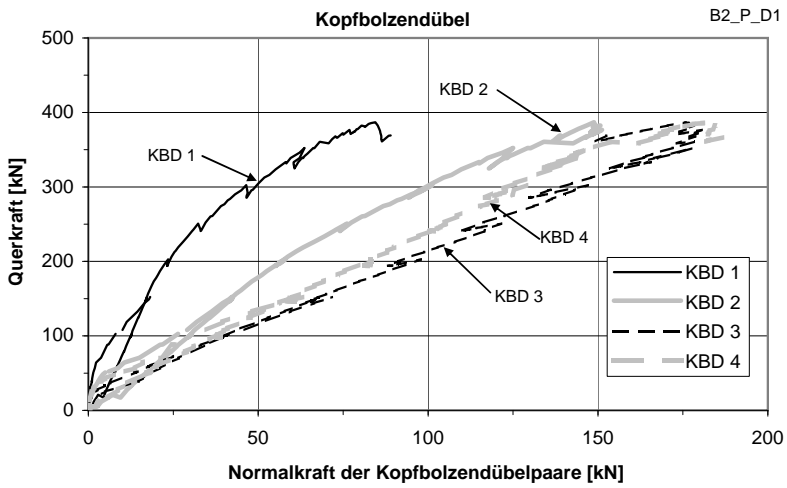
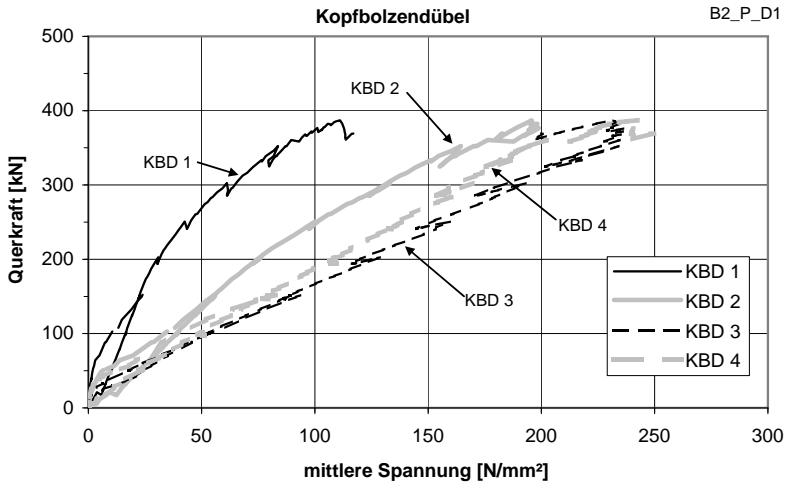




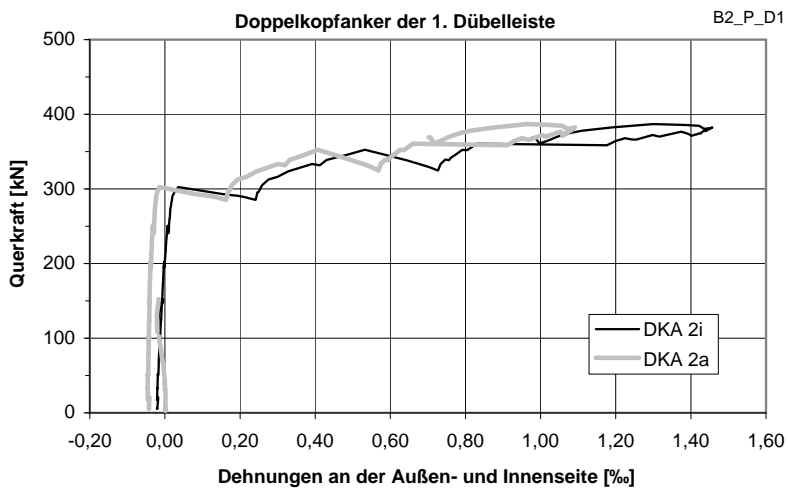
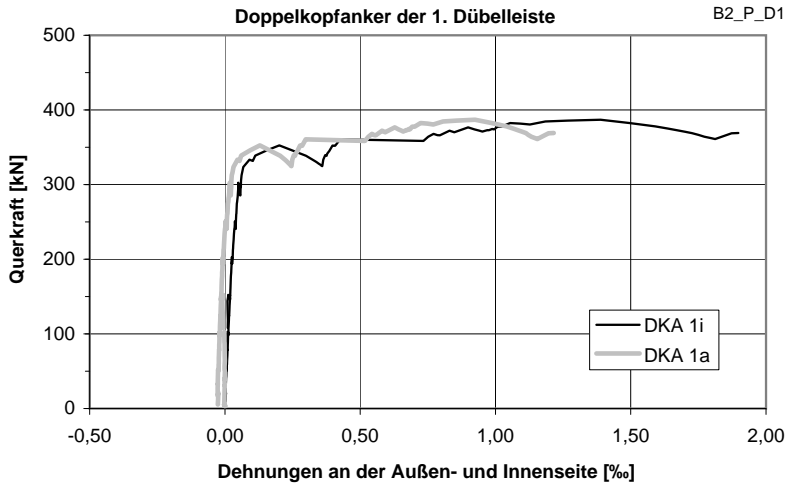
B.1.3. Kopfbolzendübel

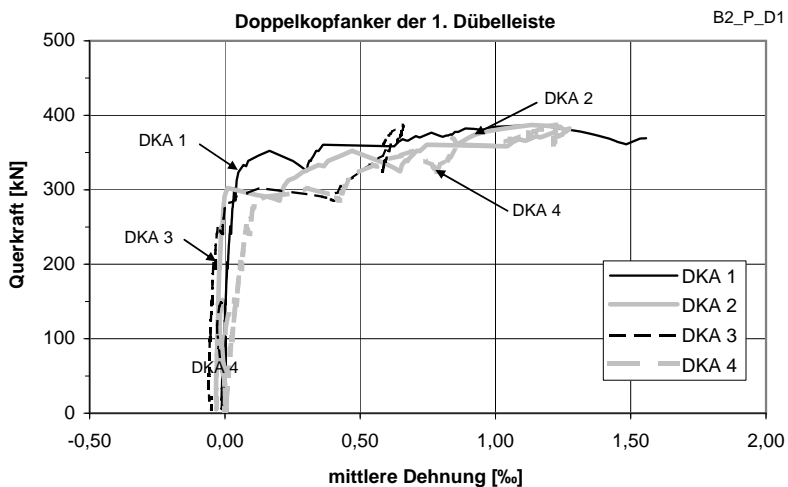
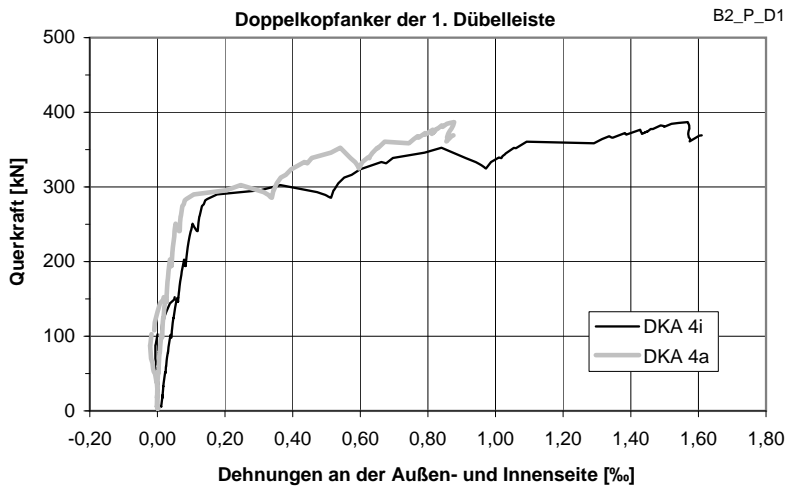
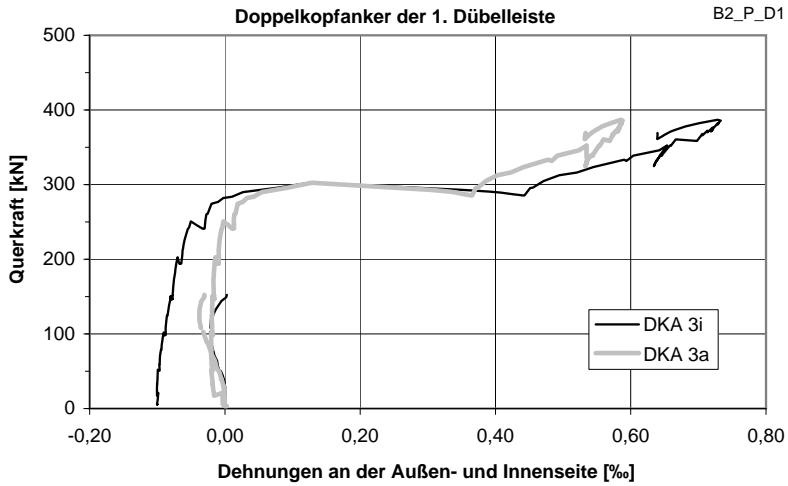


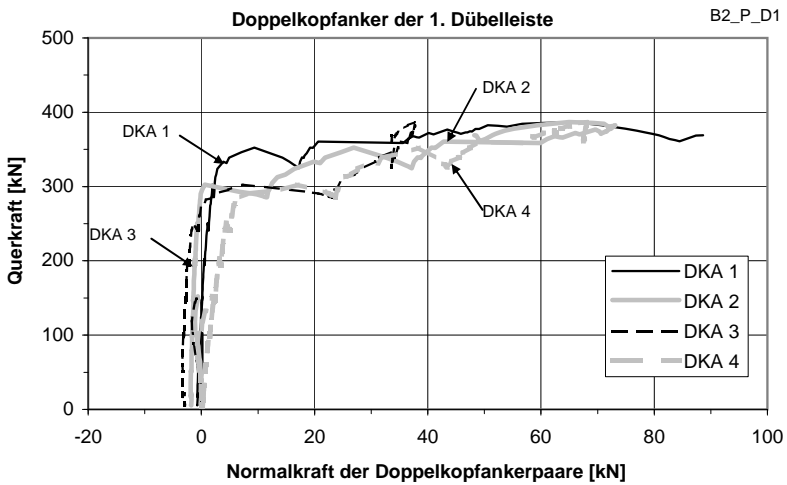
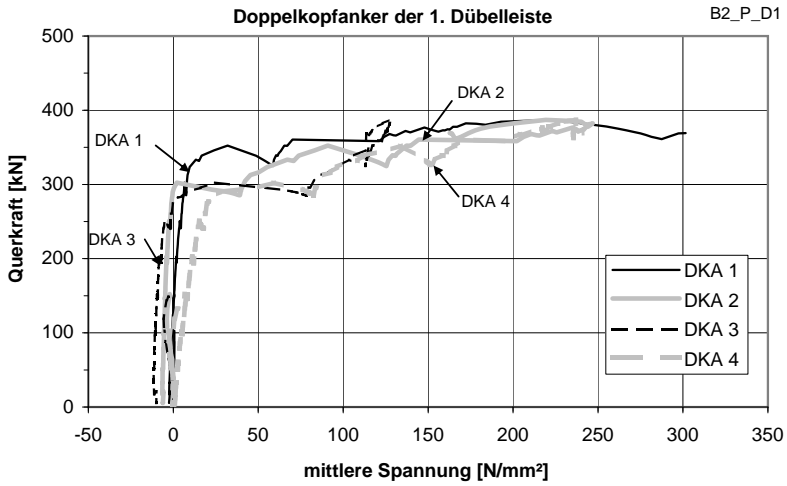




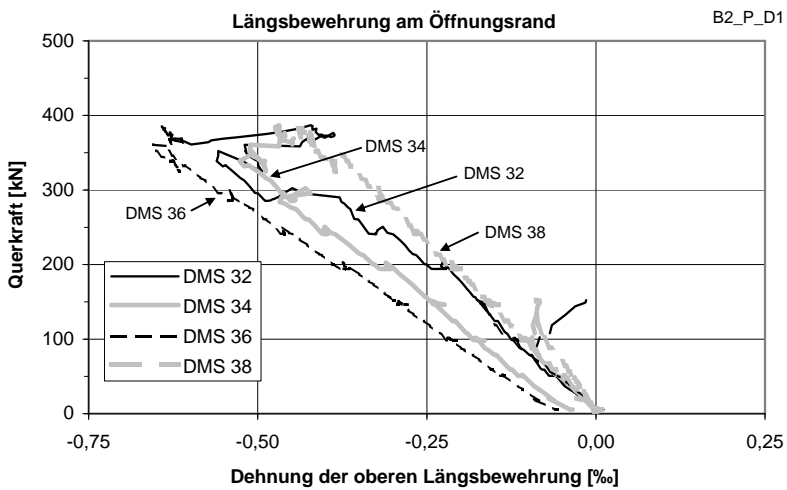
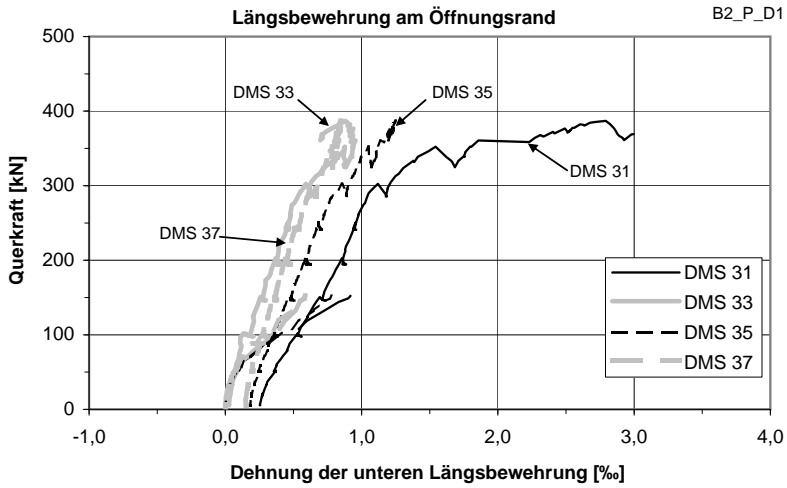
B.1.4. Doppelkopfkanker

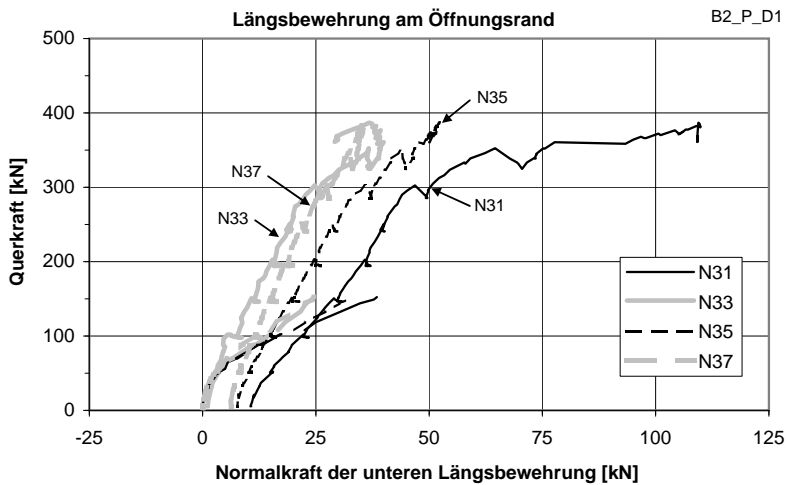
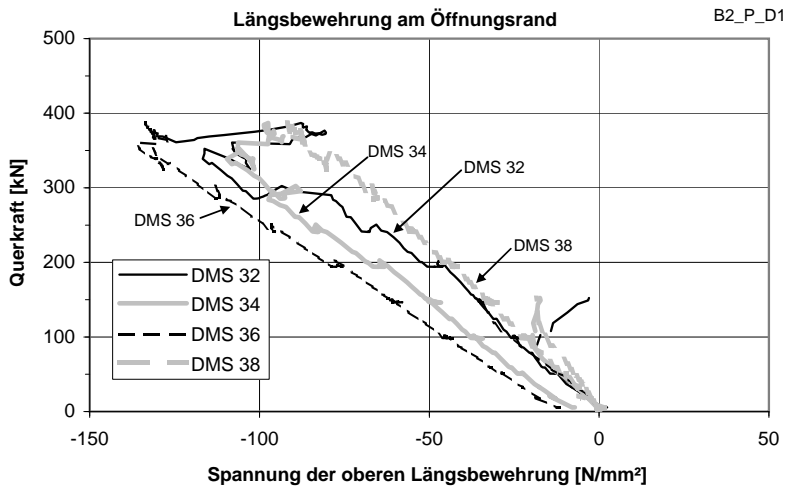
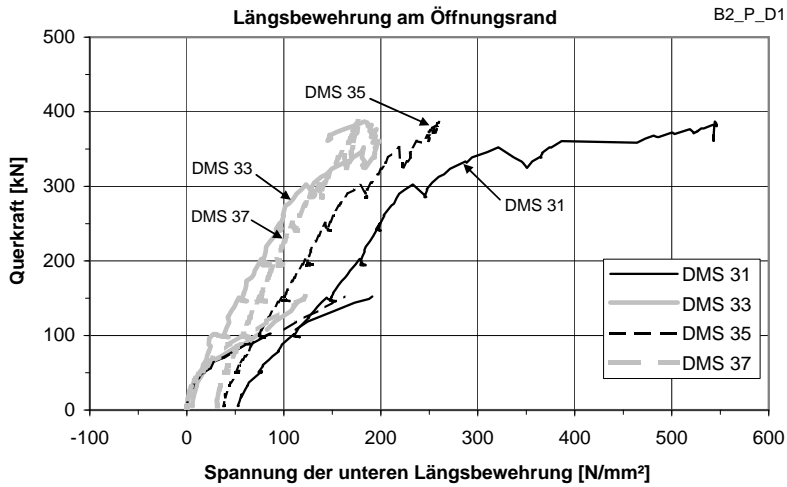


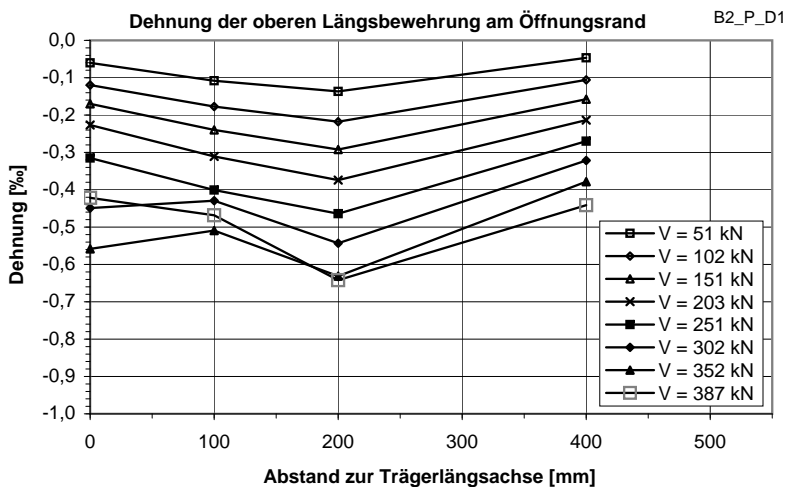
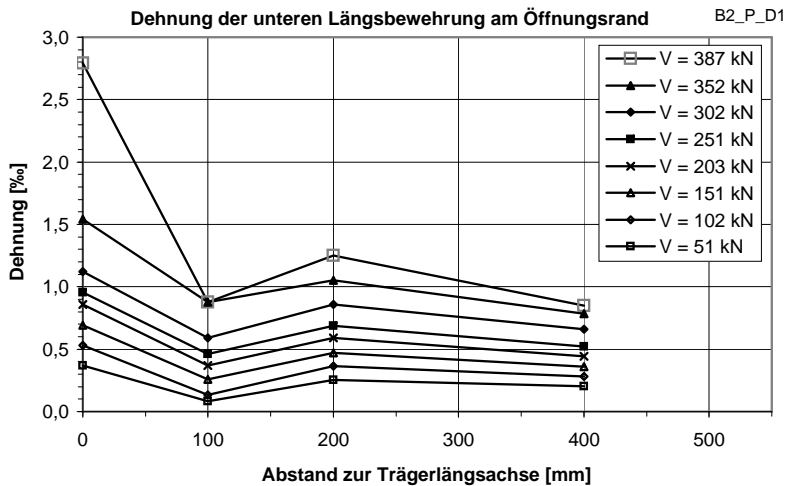
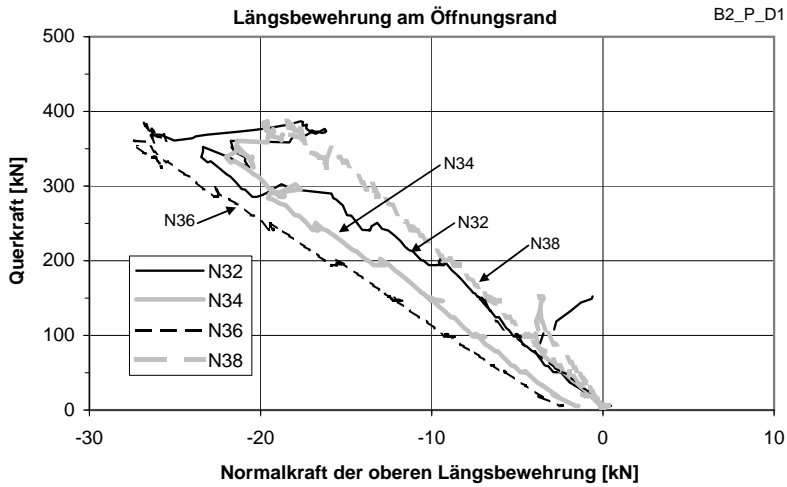


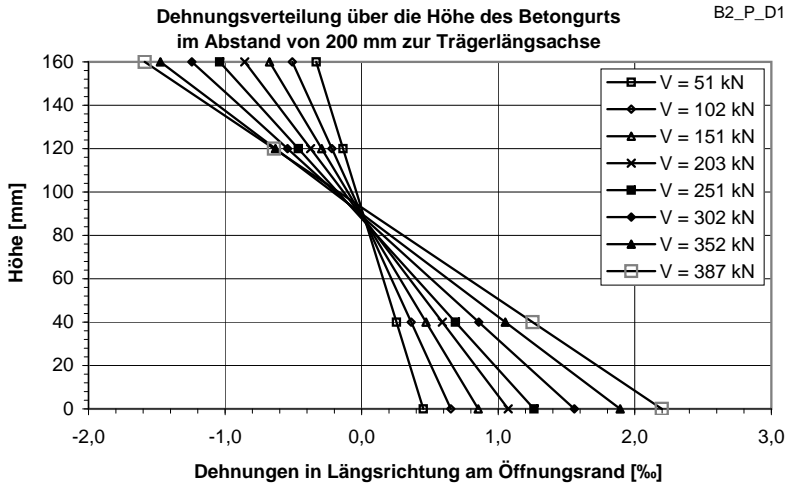
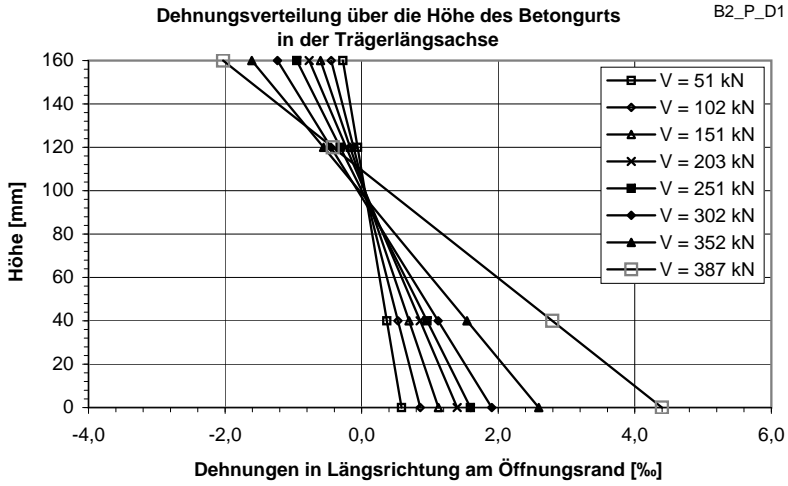


B.1.5. Längsbewehrung

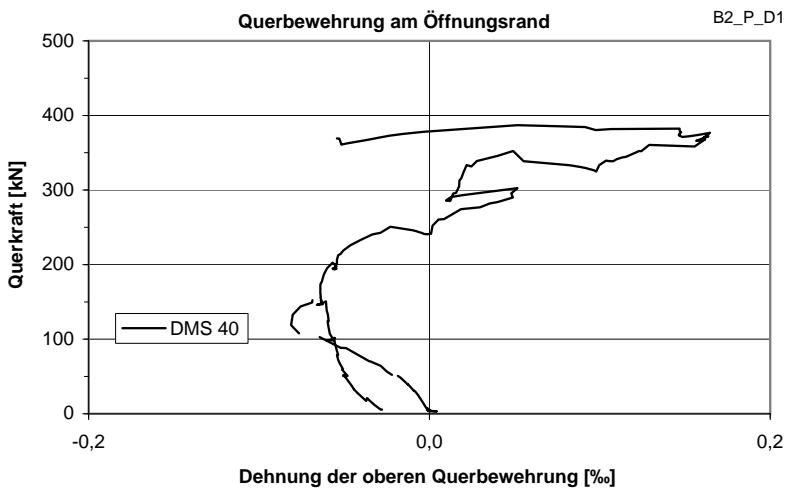
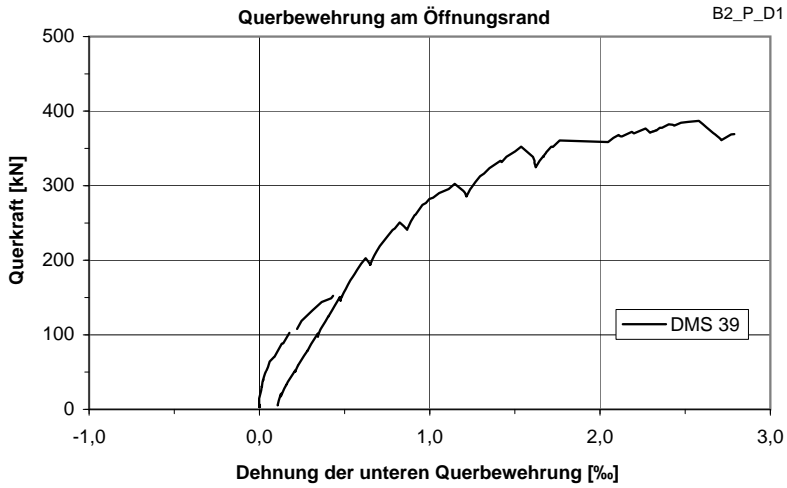


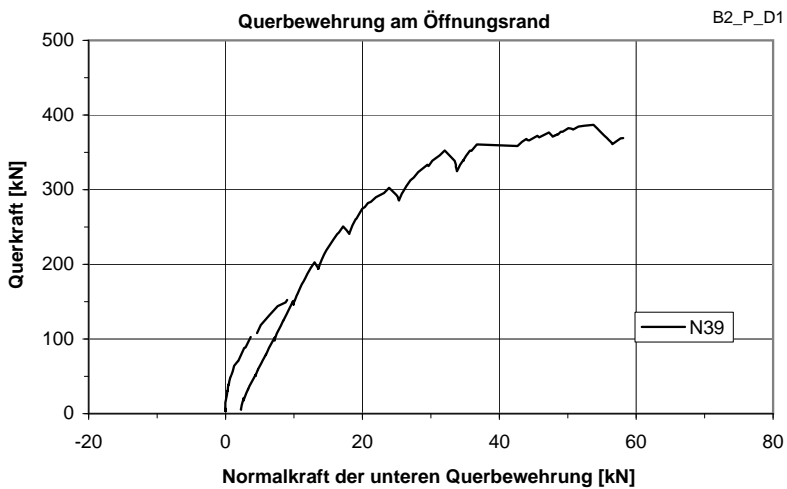
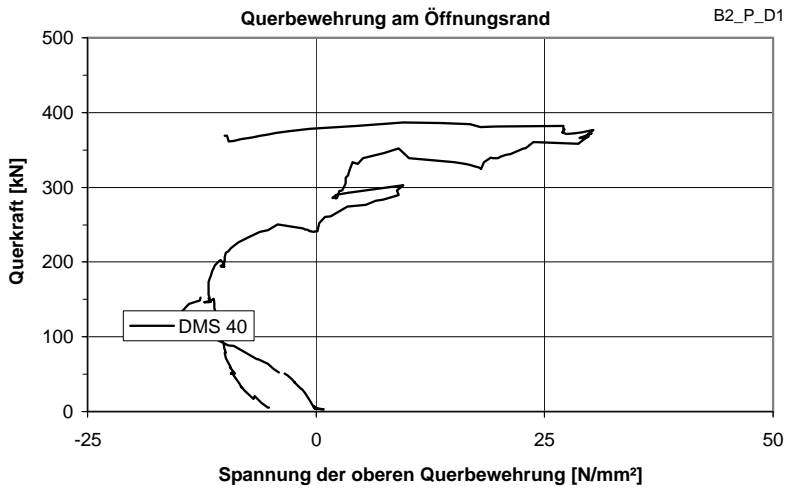
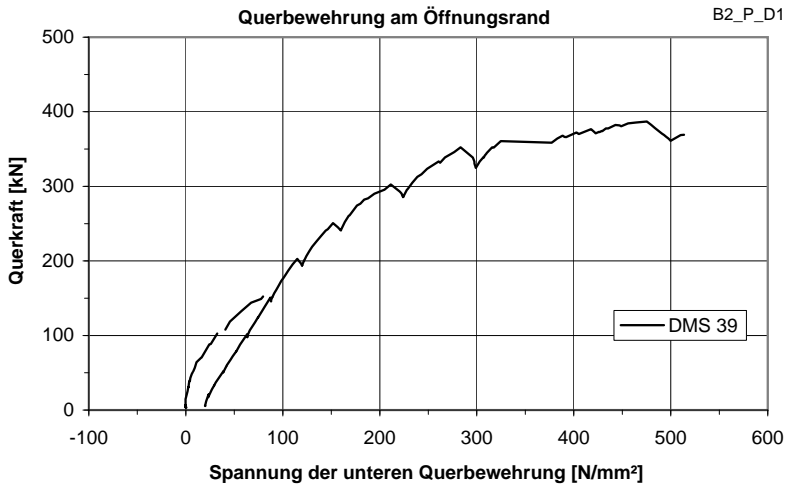


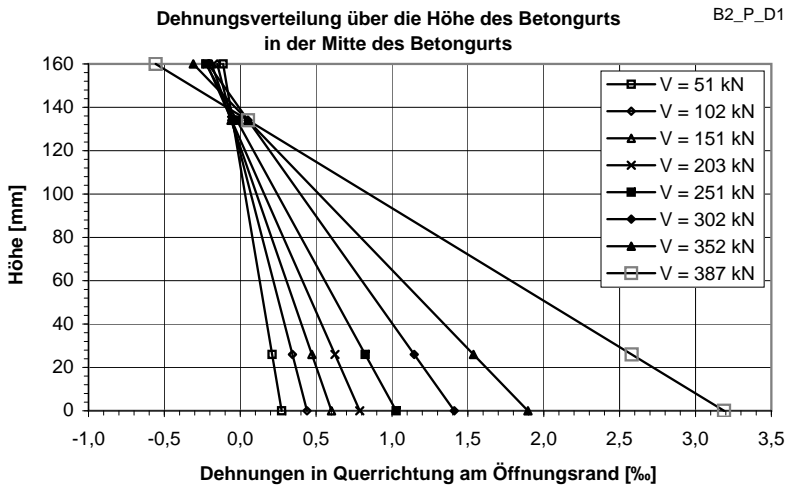
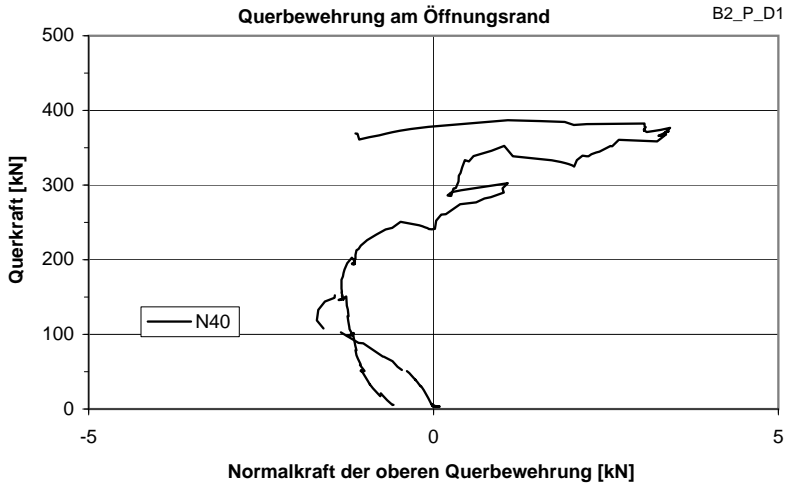




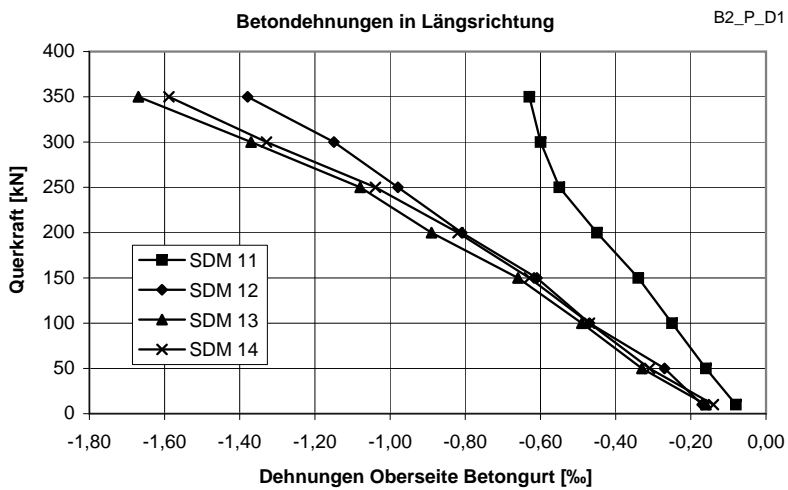
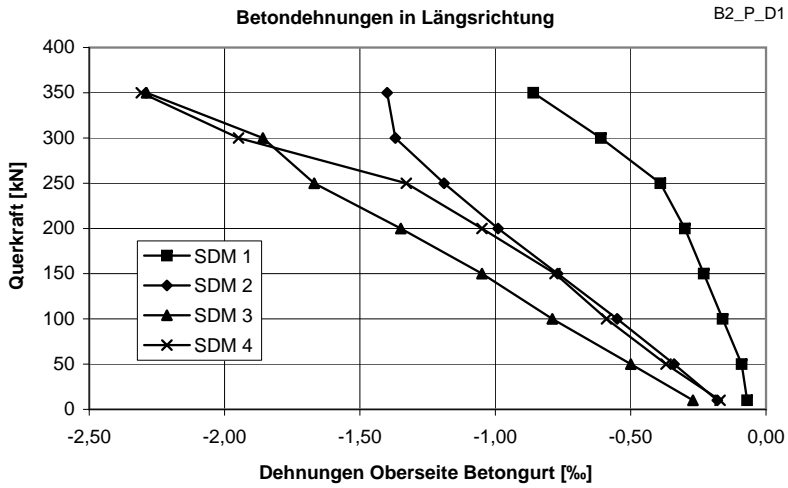
B.1.6. Querbewehrung

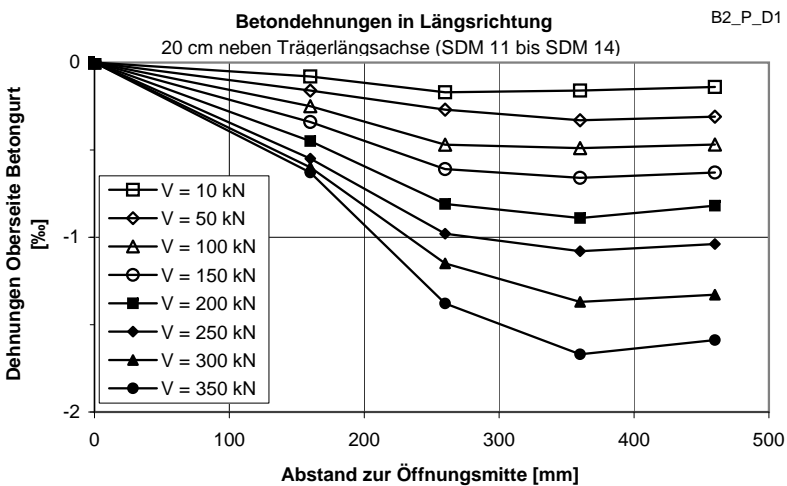
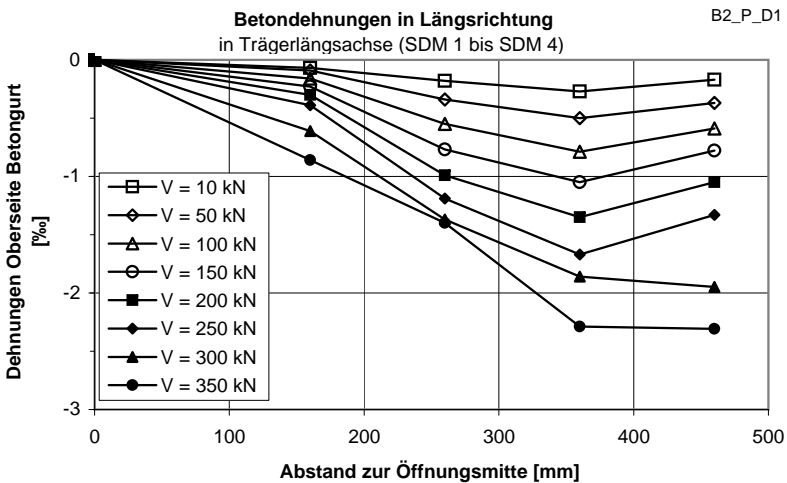
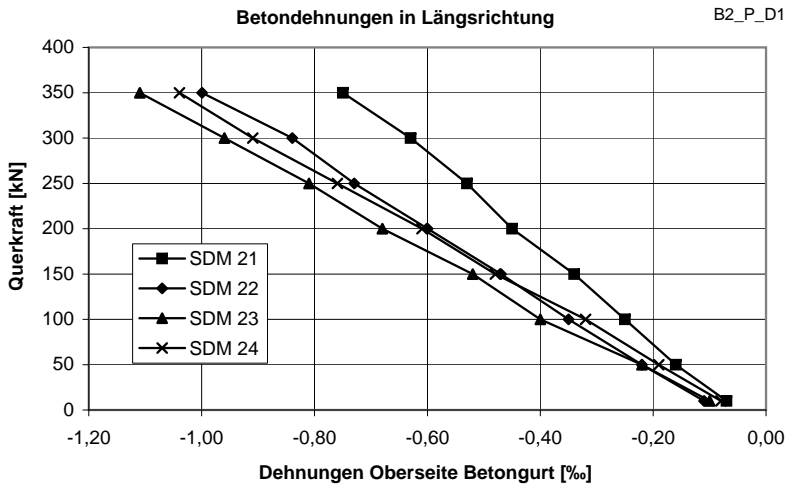


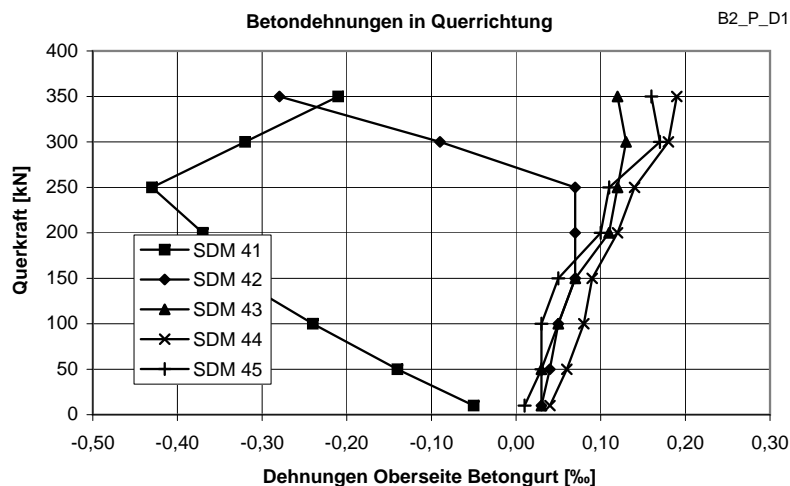
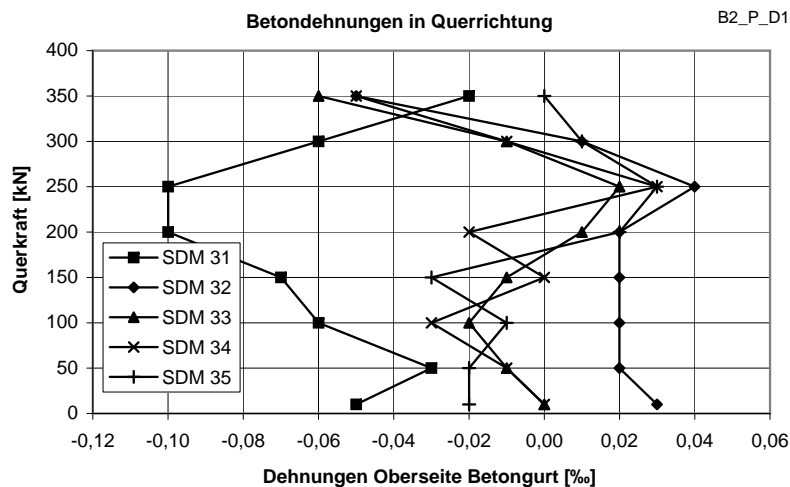
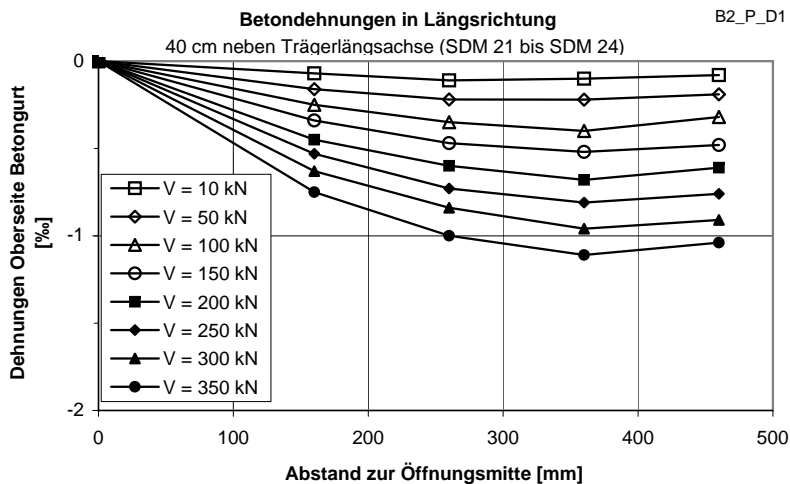


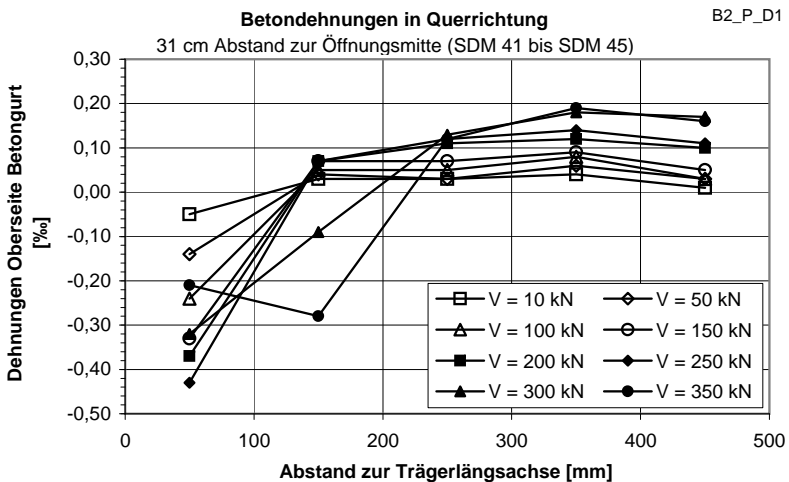
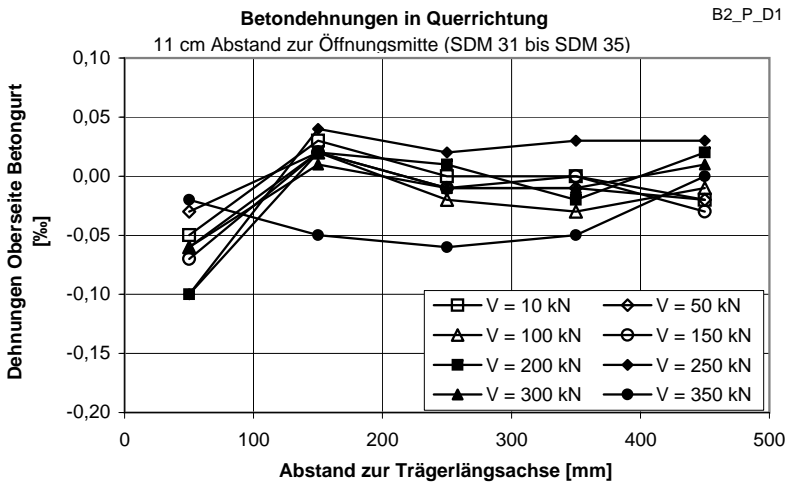
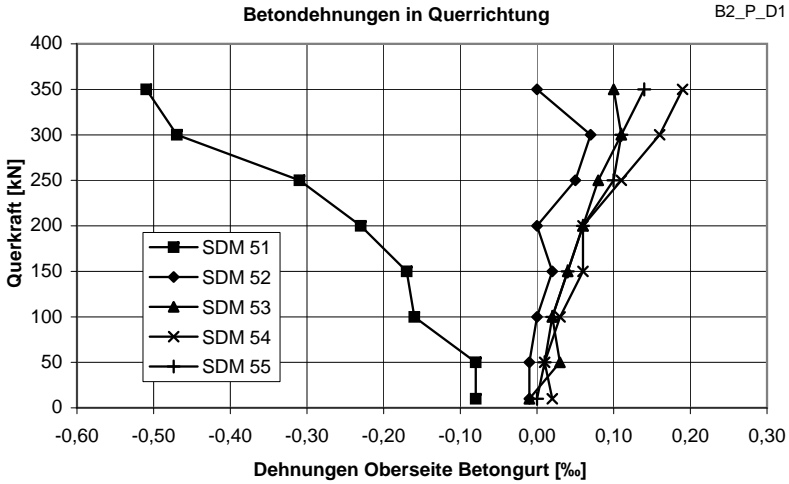


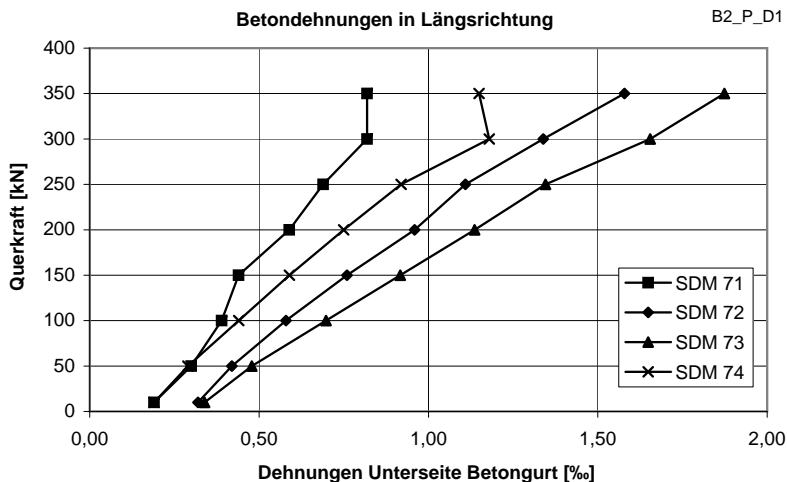
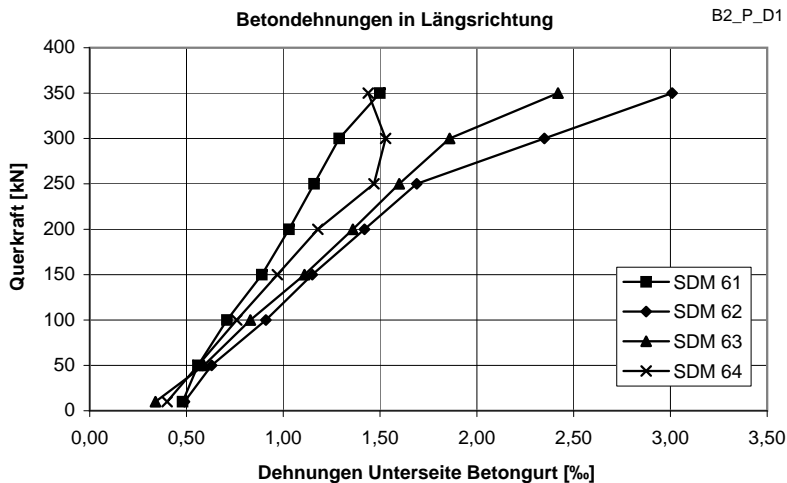
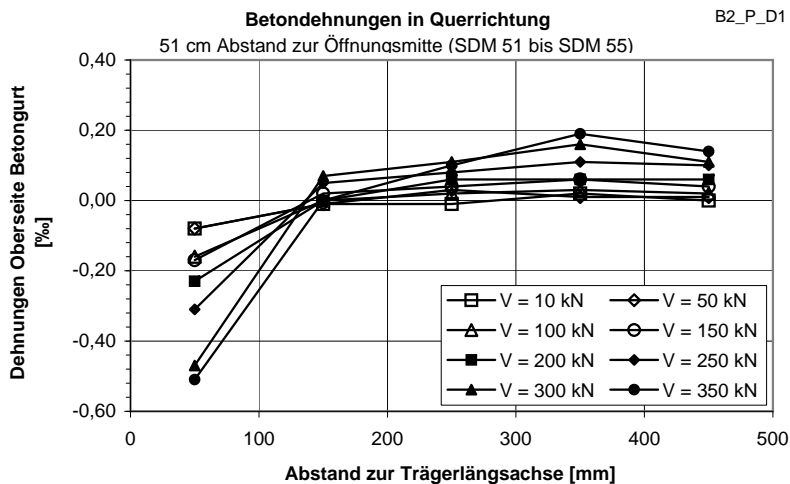
B.1.7. Betondehnungen

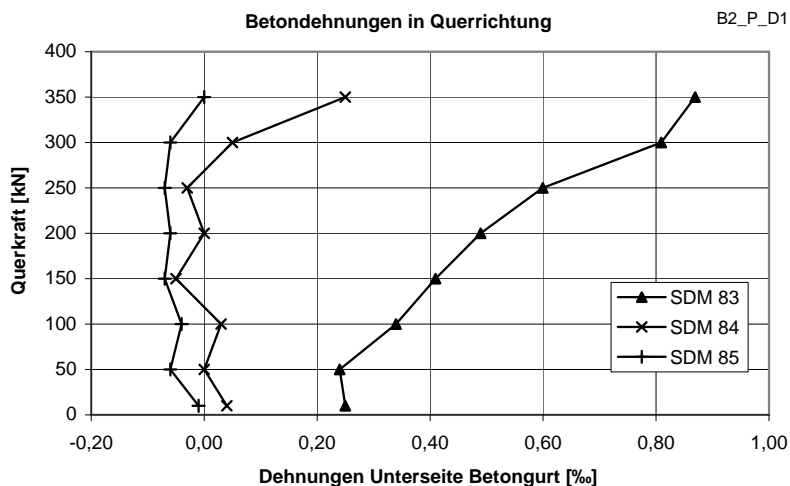
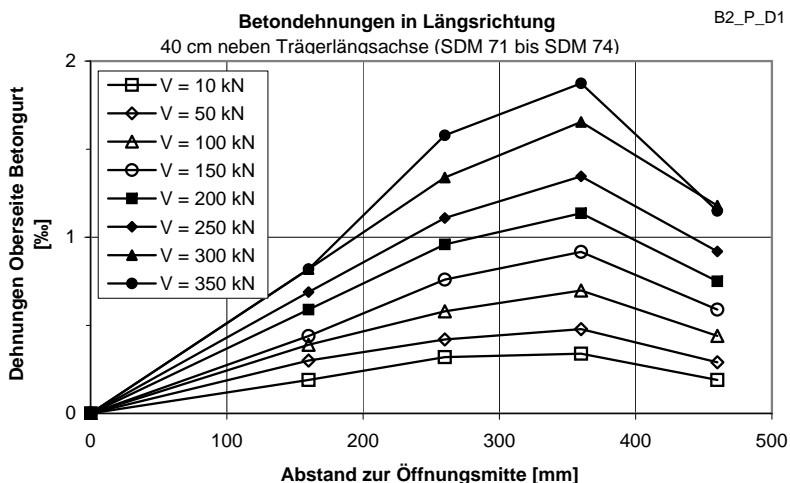
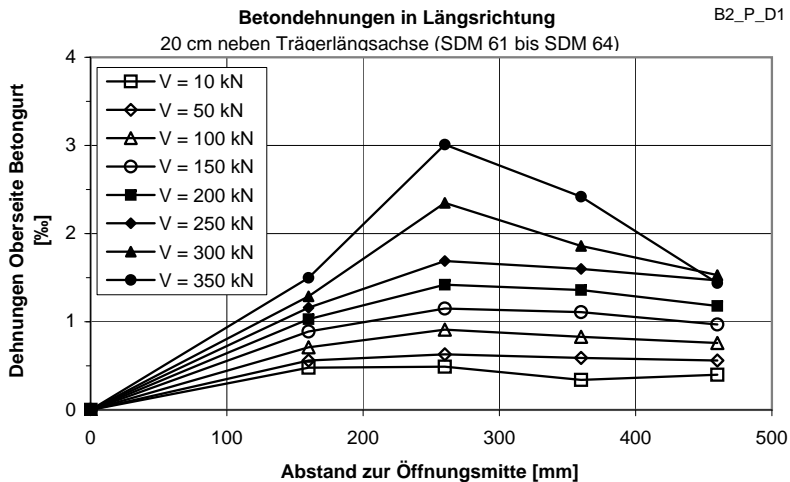


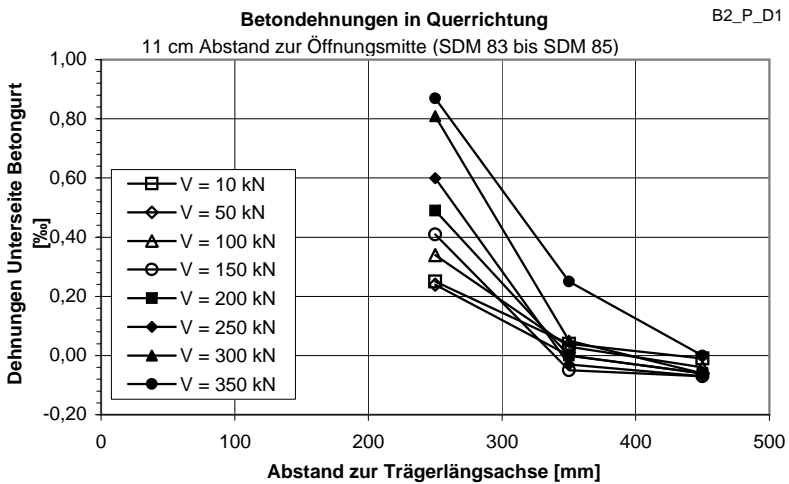
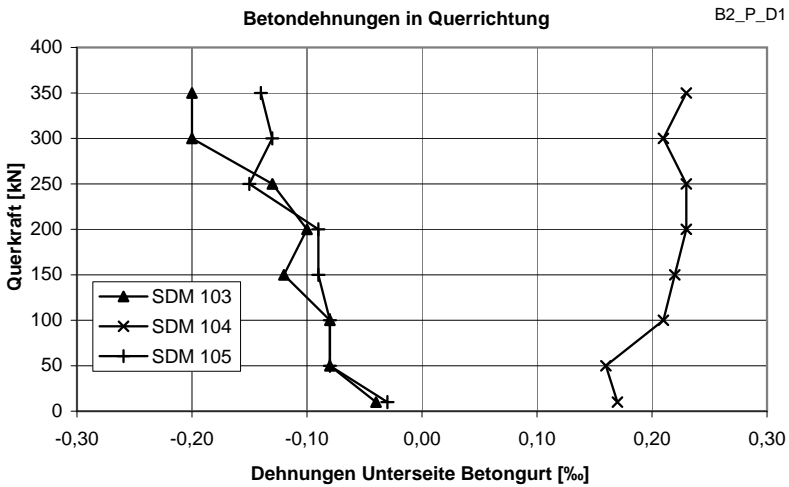
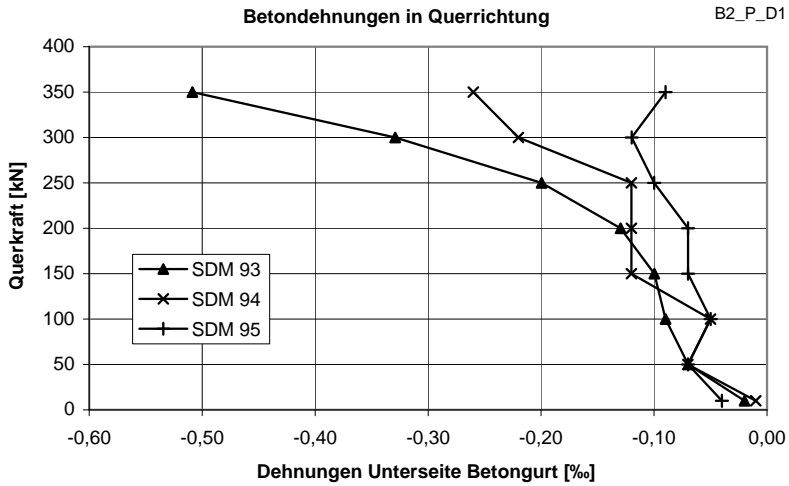


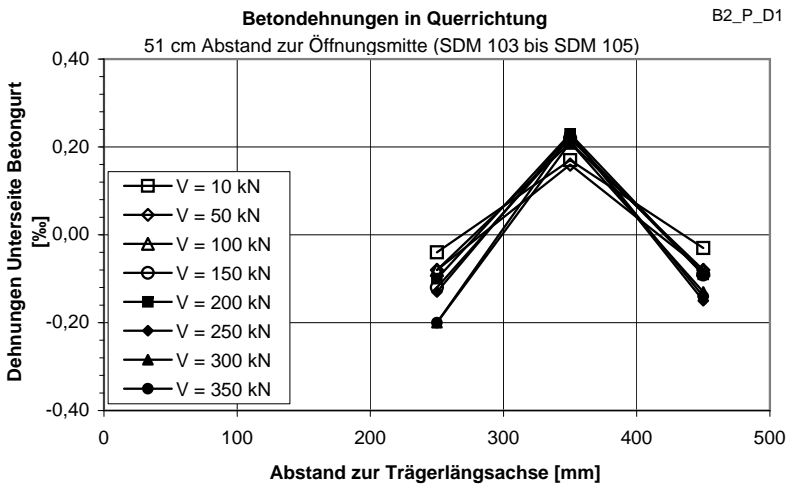
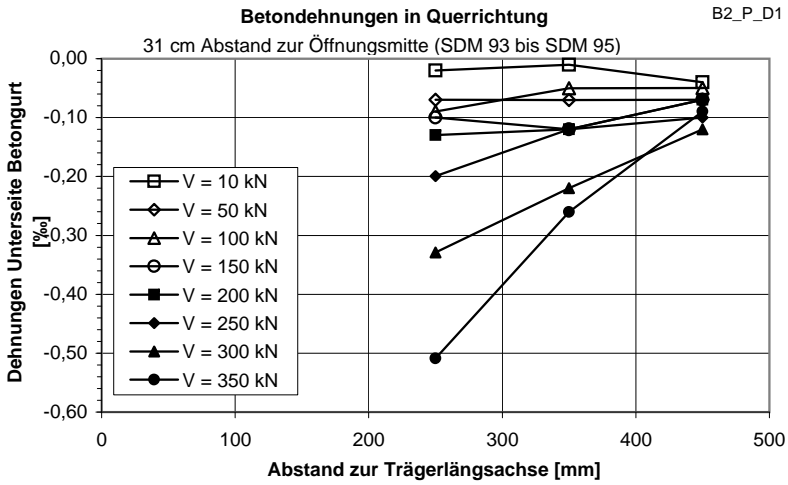






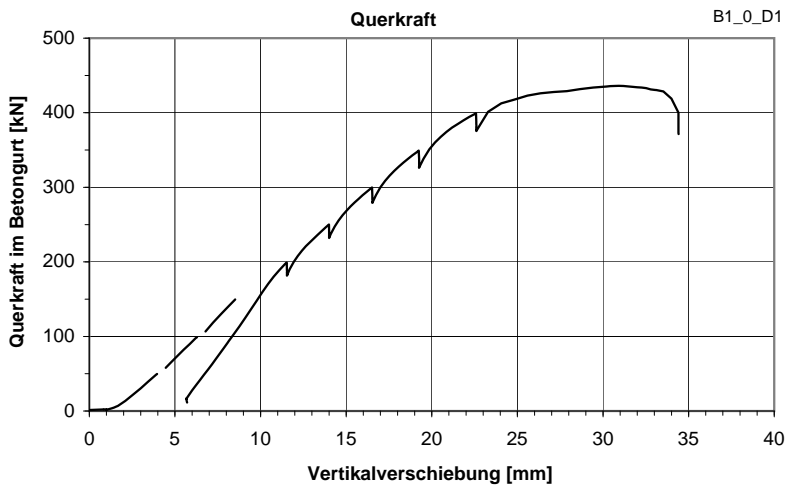
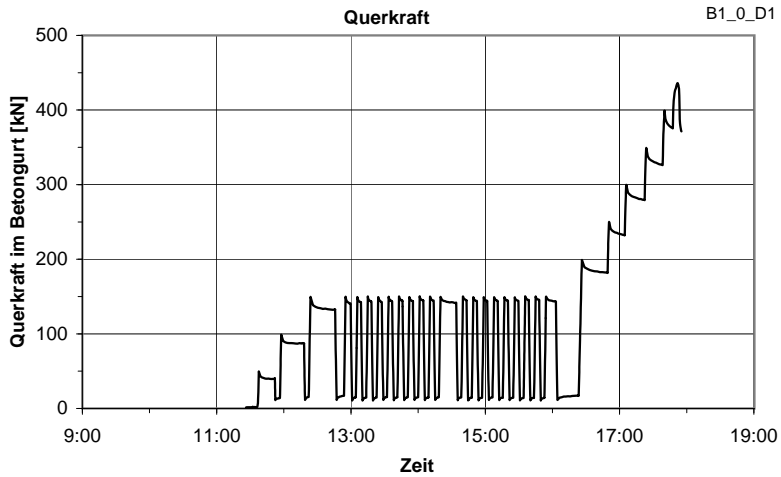


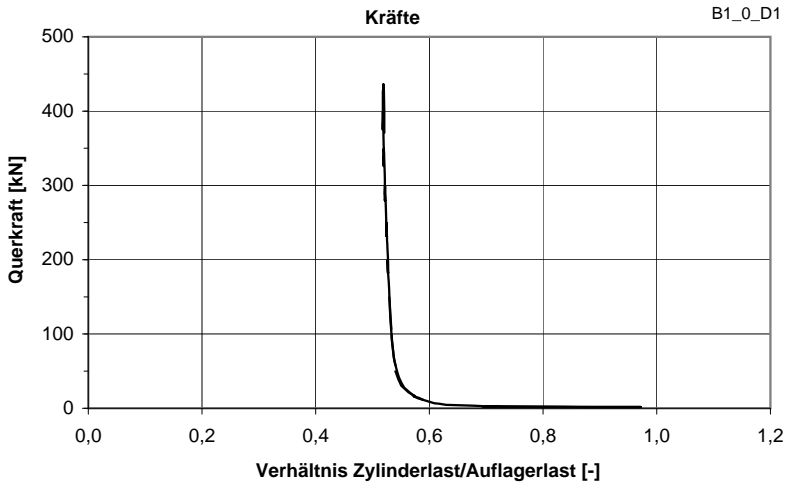
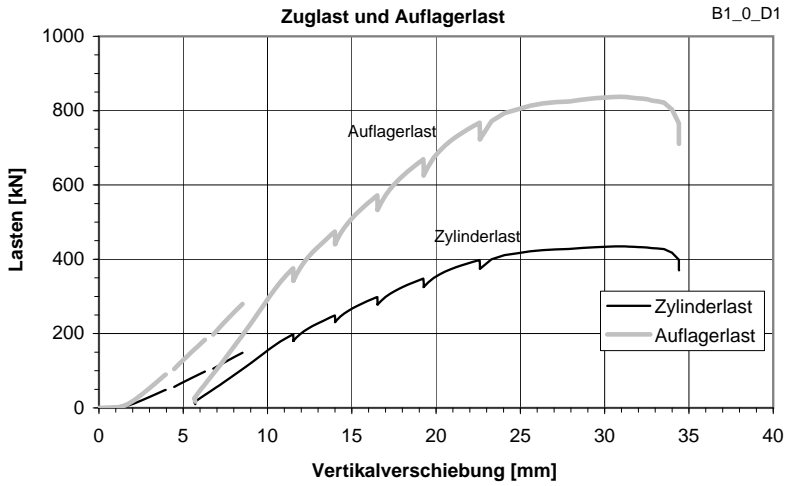




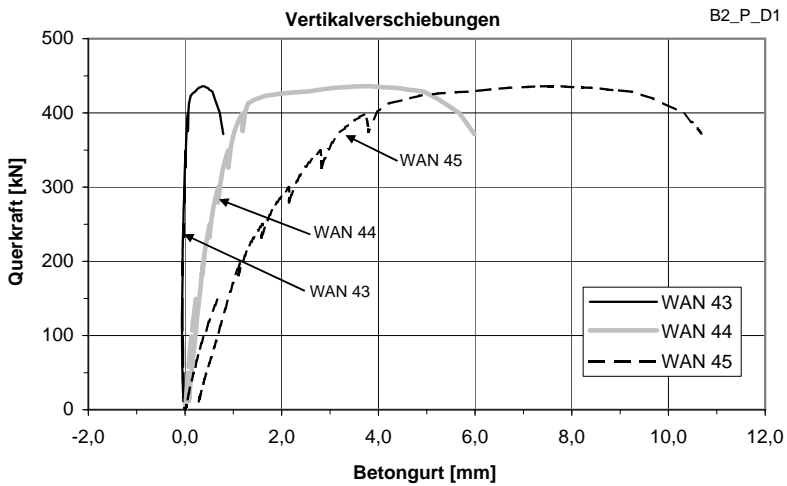
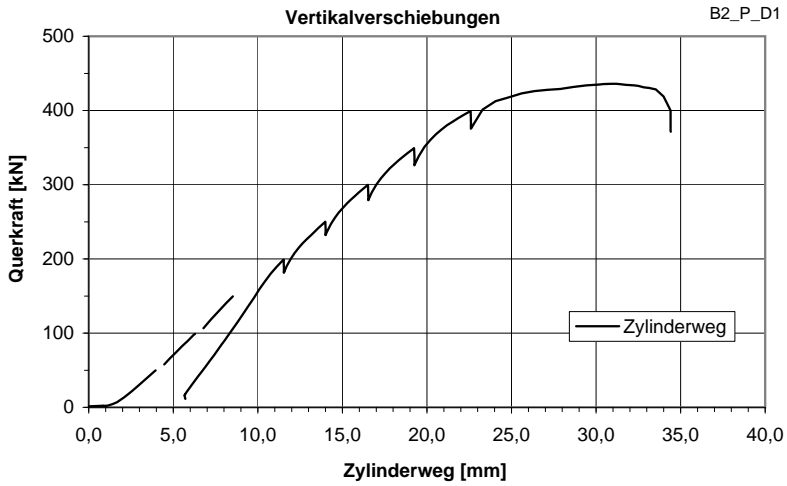
B.2. Versuch B1_0_D1

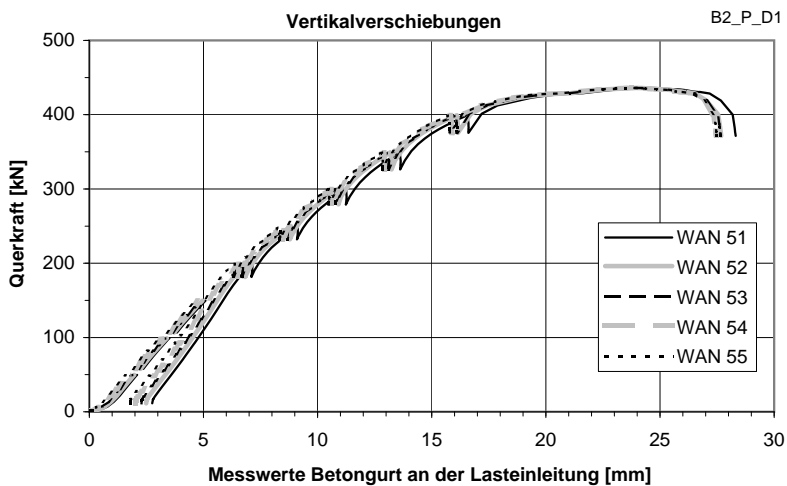
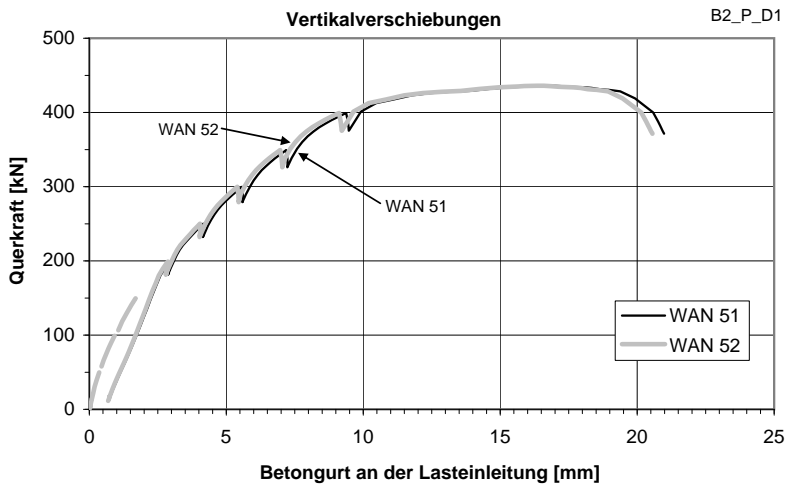
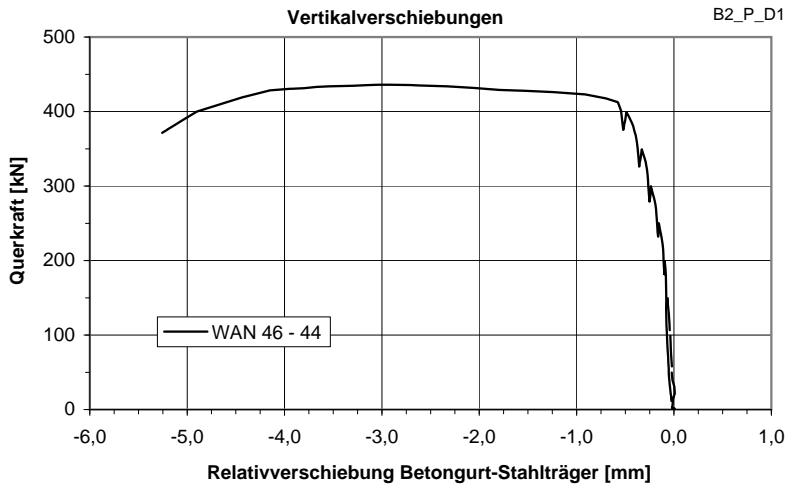
B.2.1. Kräfte



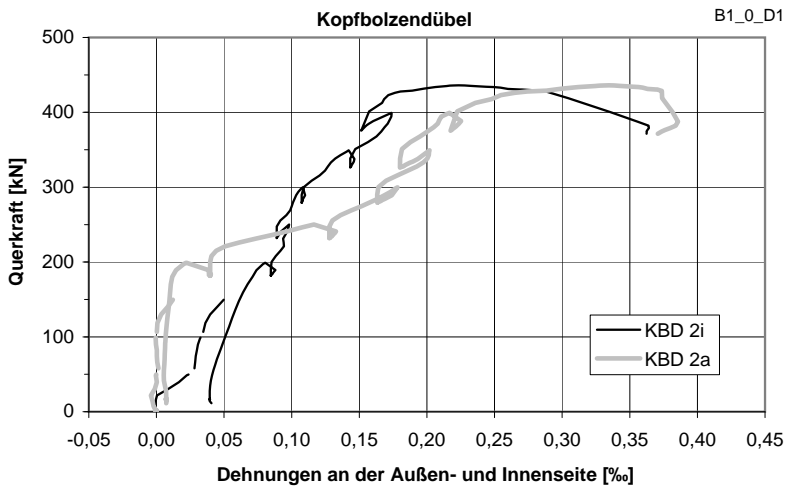
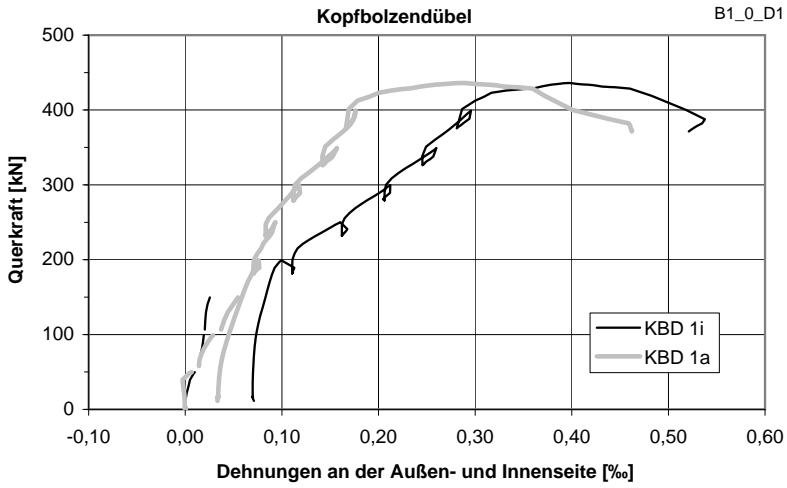


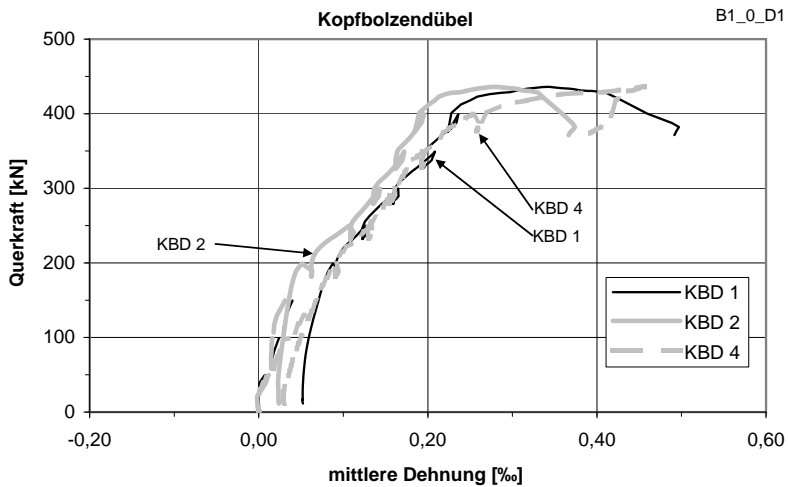
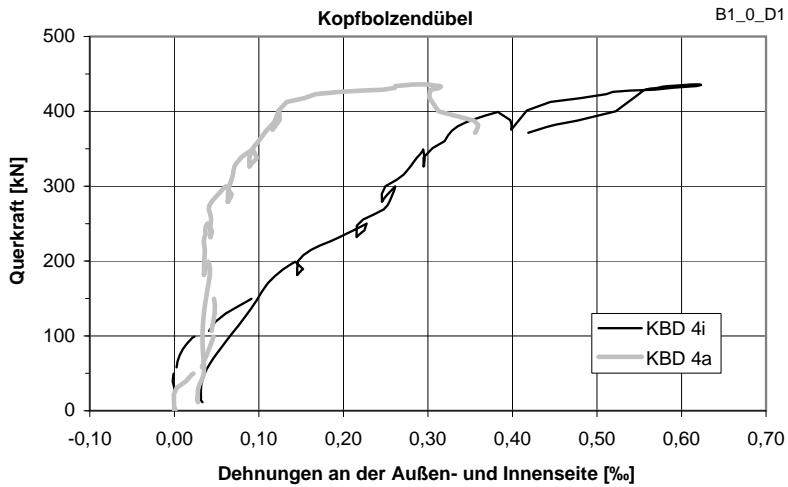
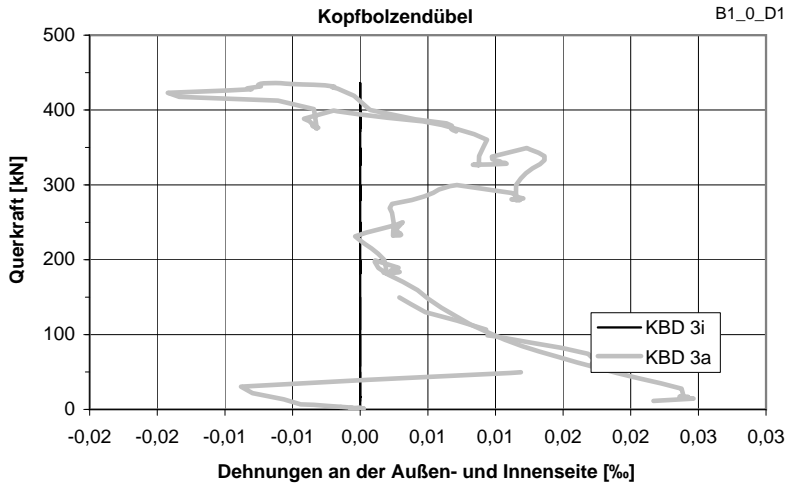
B.2.2. Verformungen

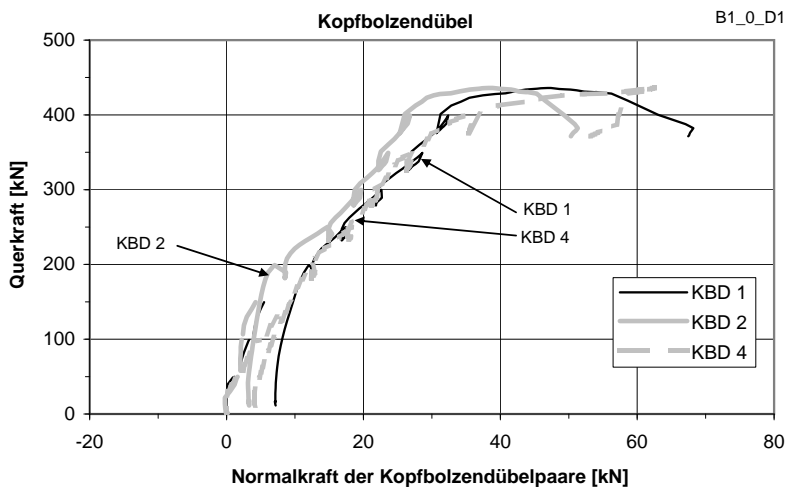
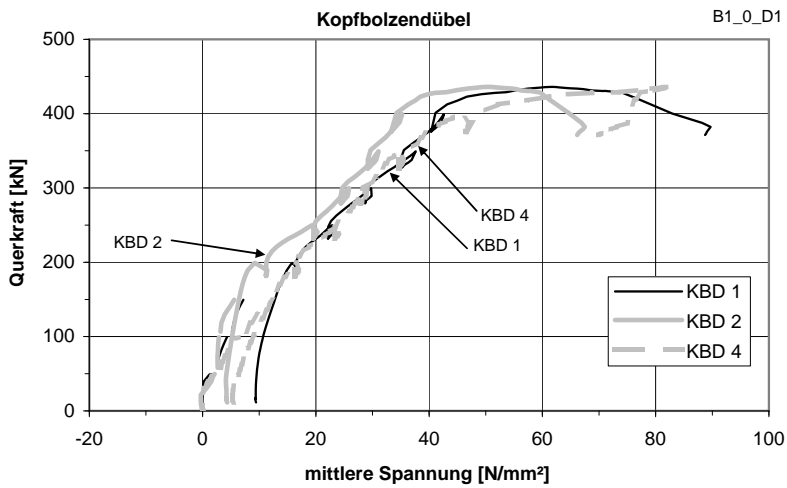




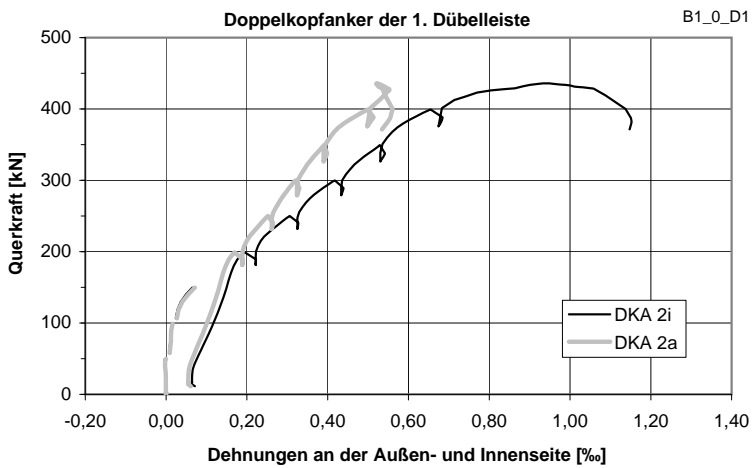
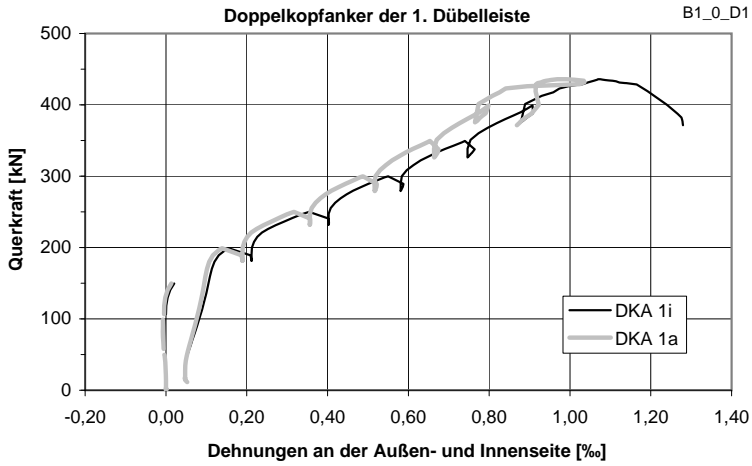
B.2.3. Kopfbolzendübel

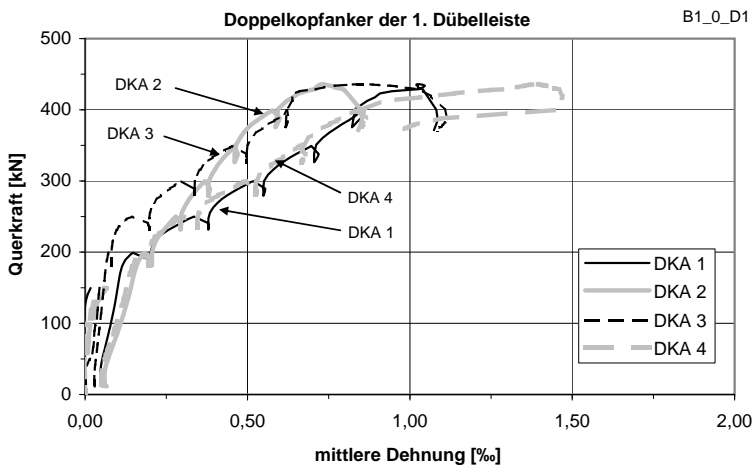
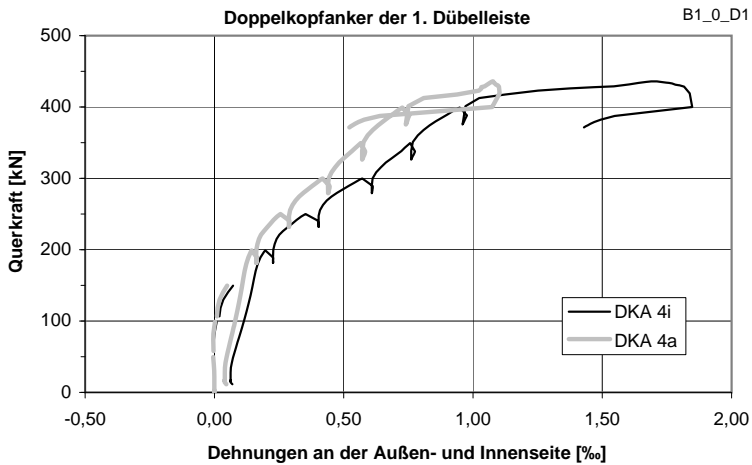
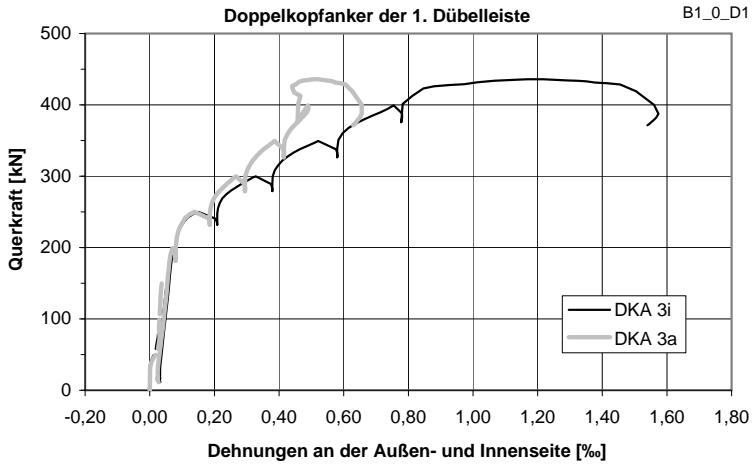


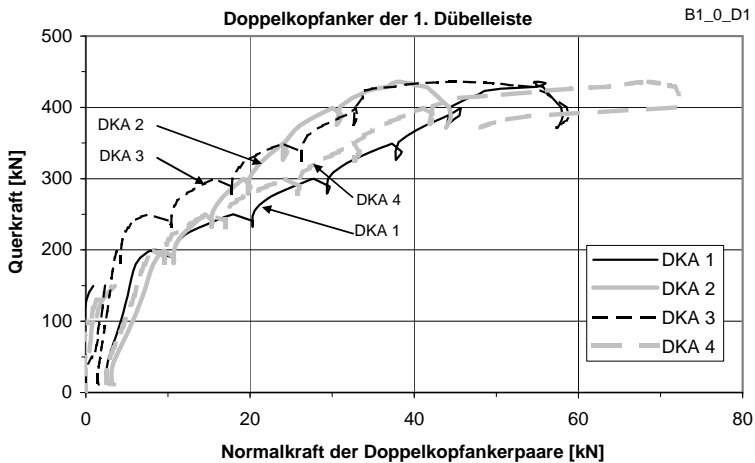
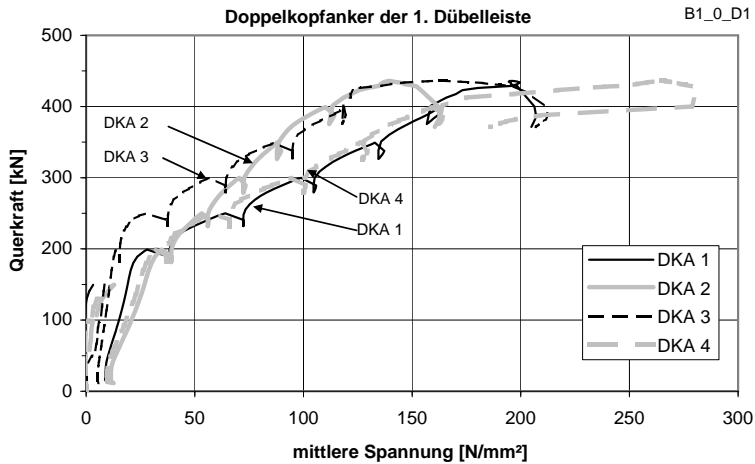




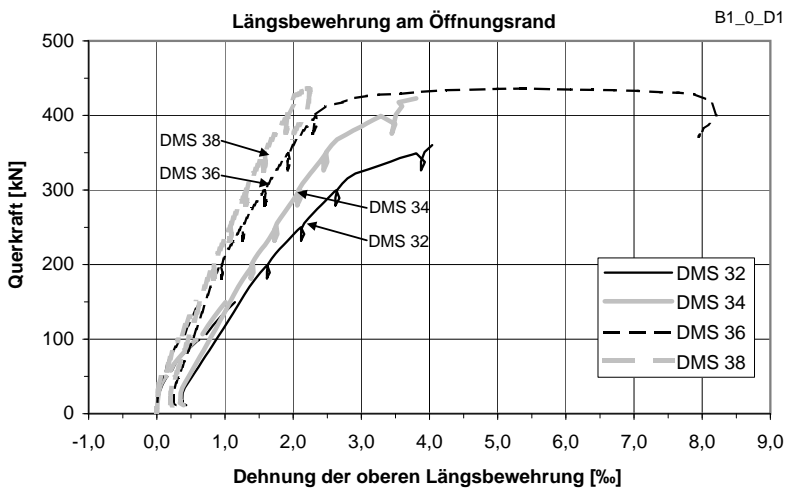
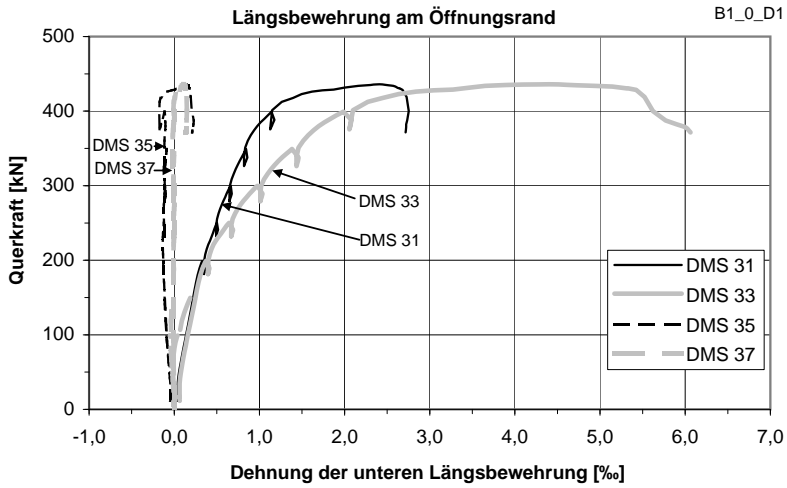
B.2.4. Doppelkopfanker

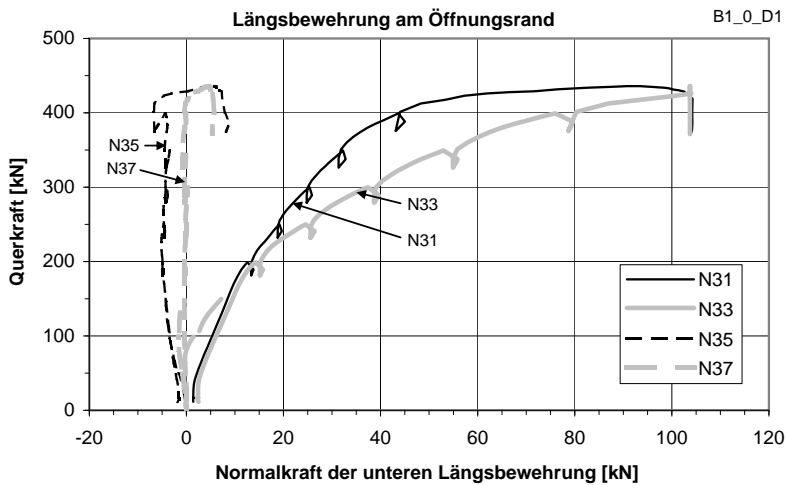
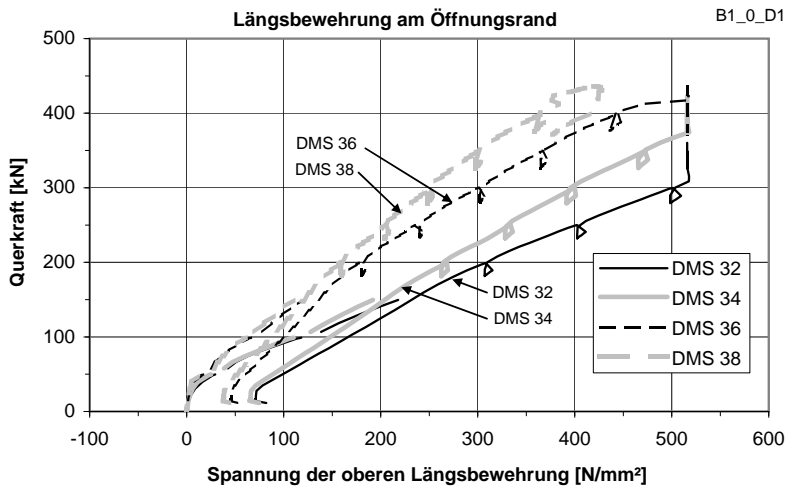
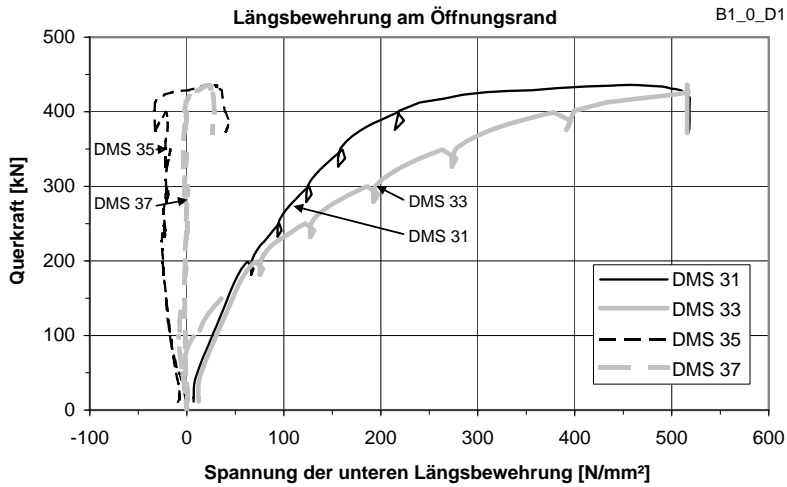


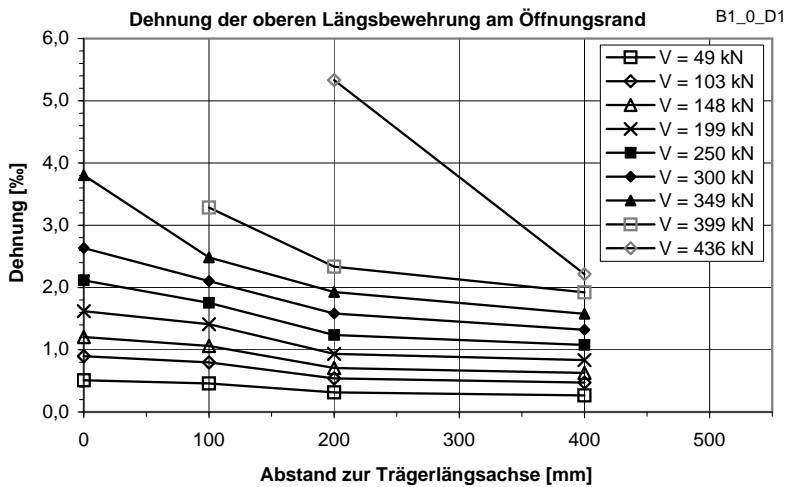
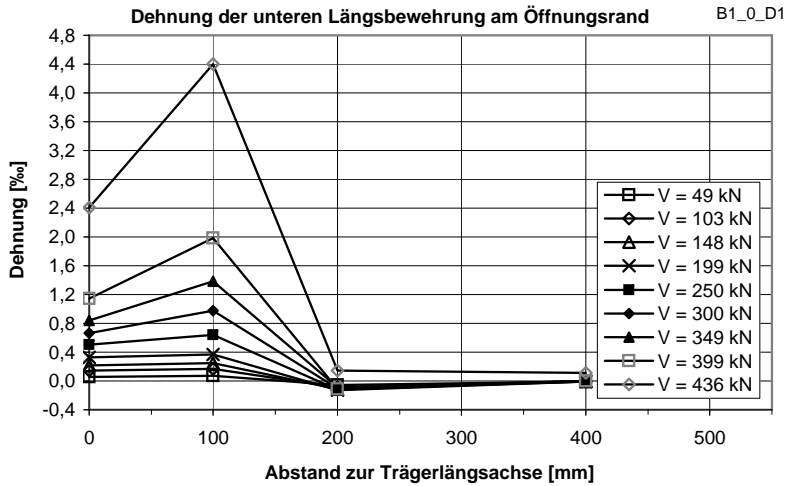
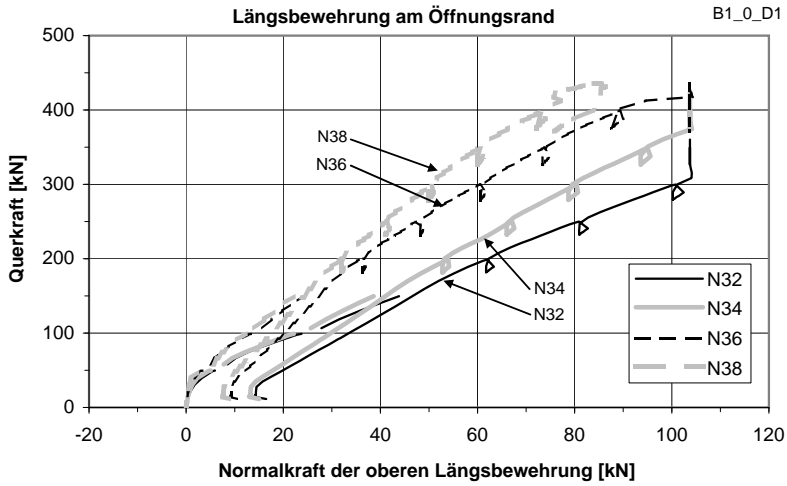


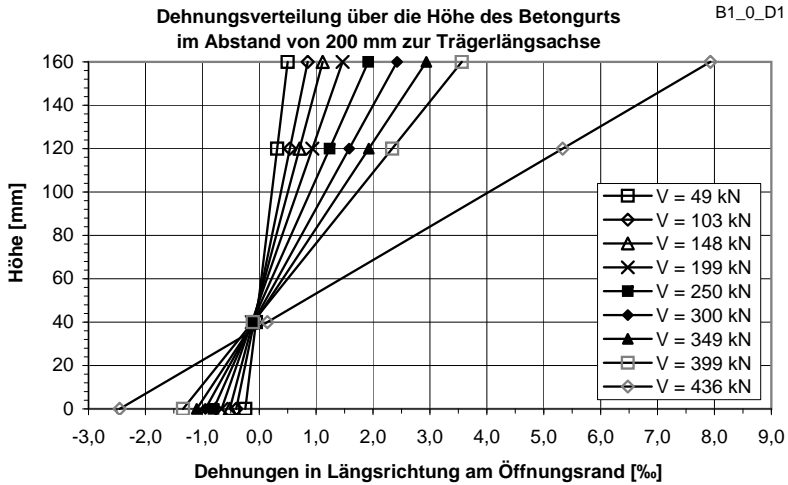
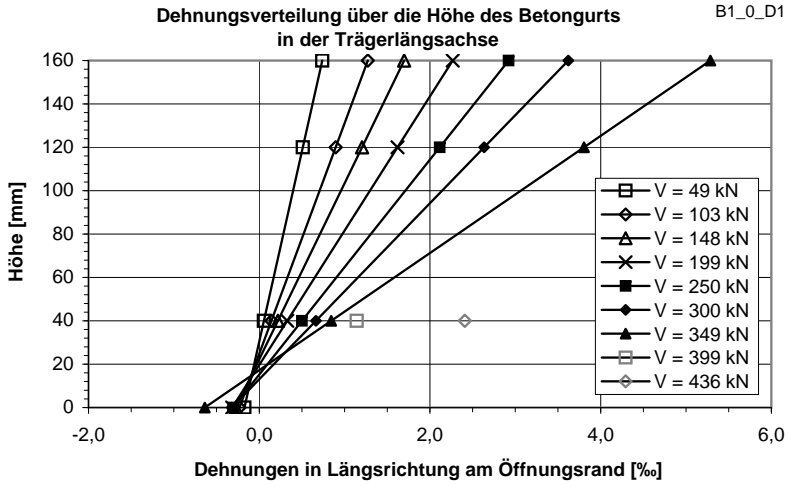


B.2.5. Längsbewehrung

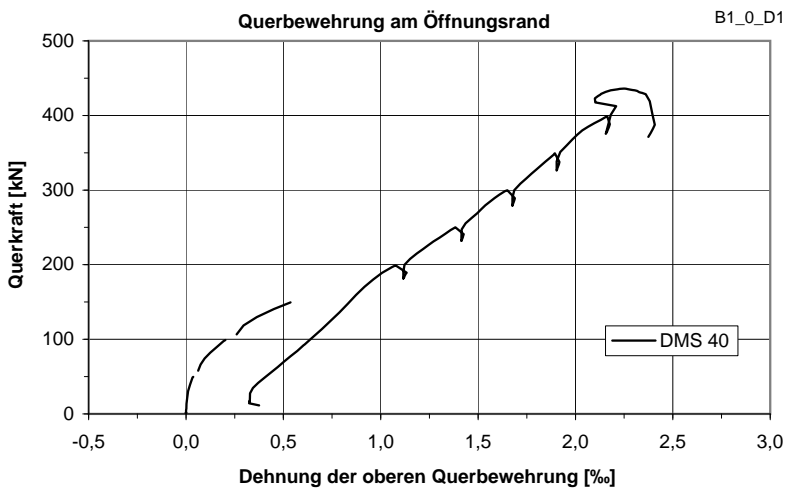
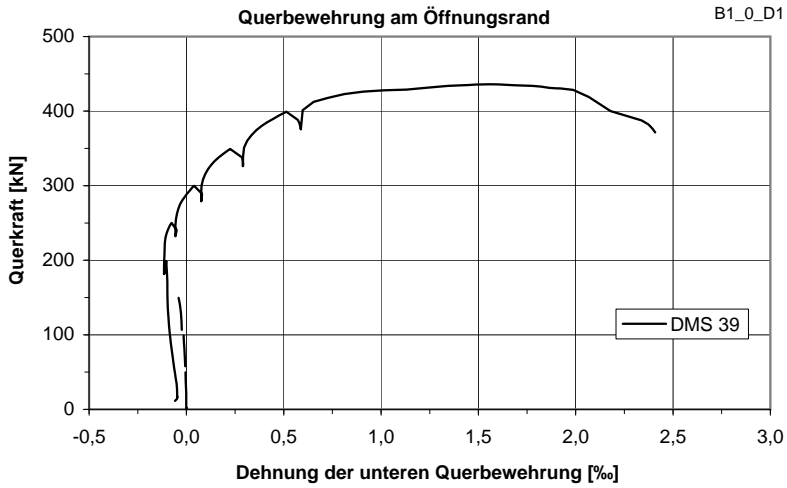


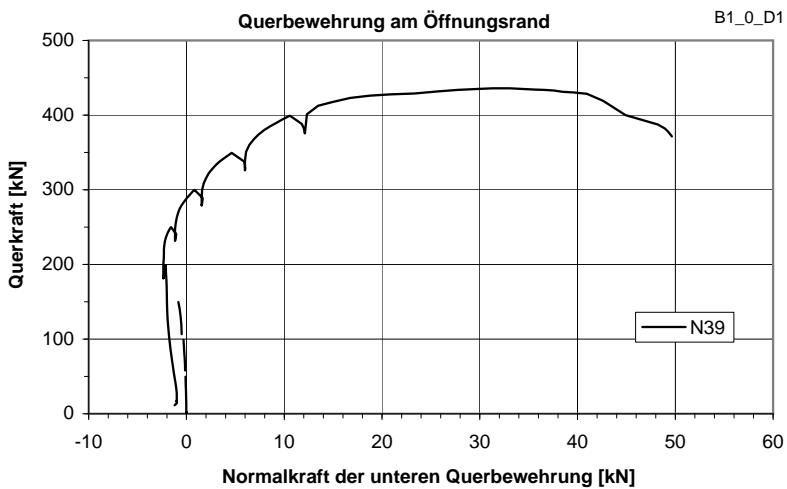
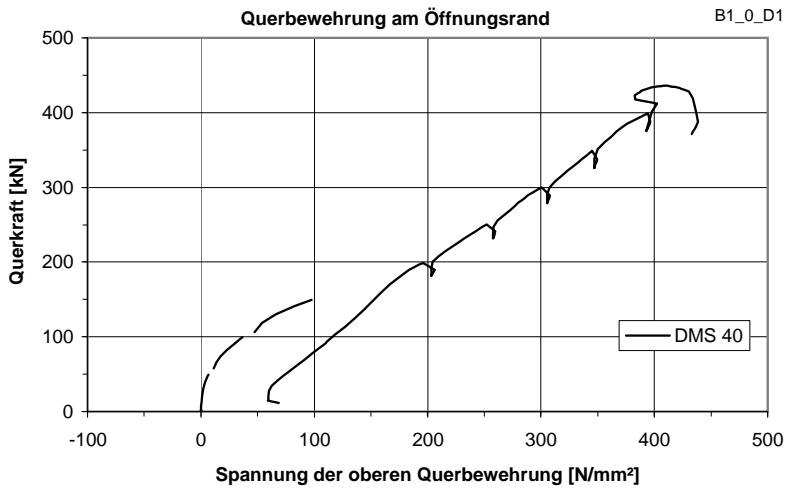
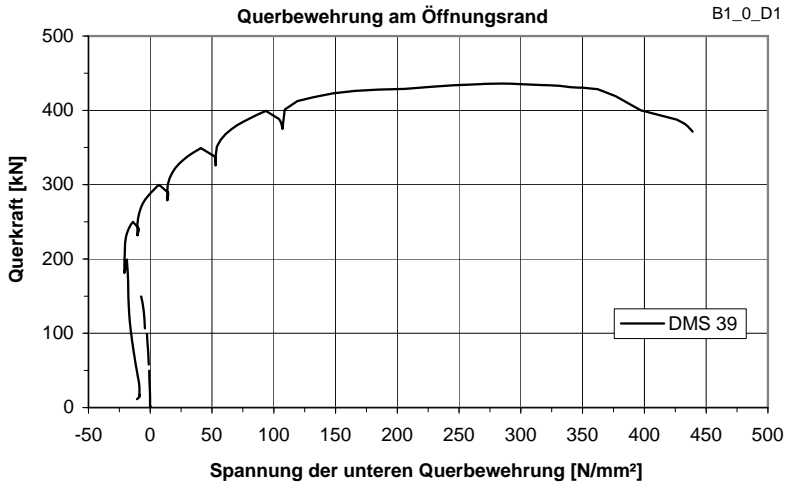


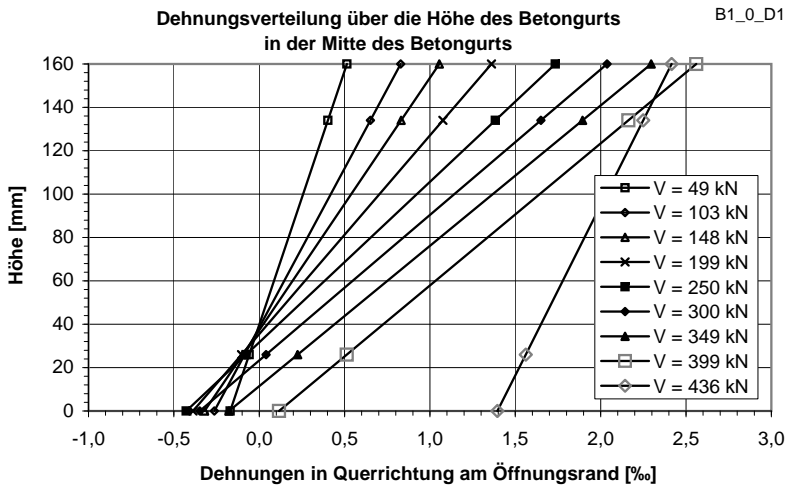
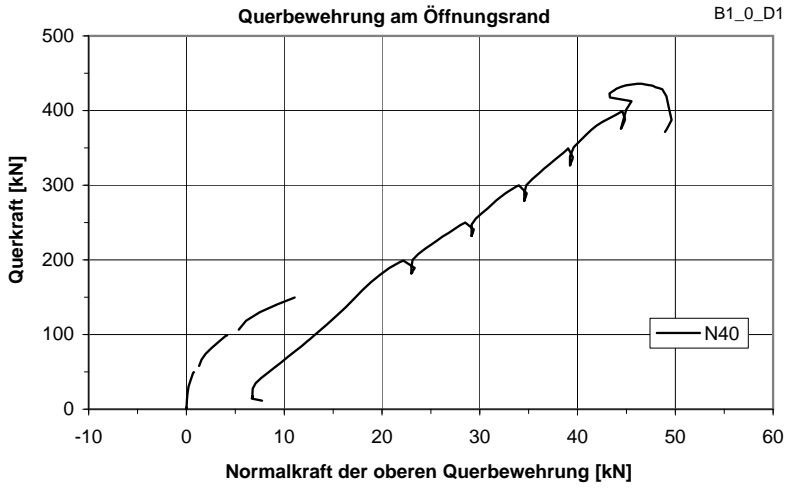




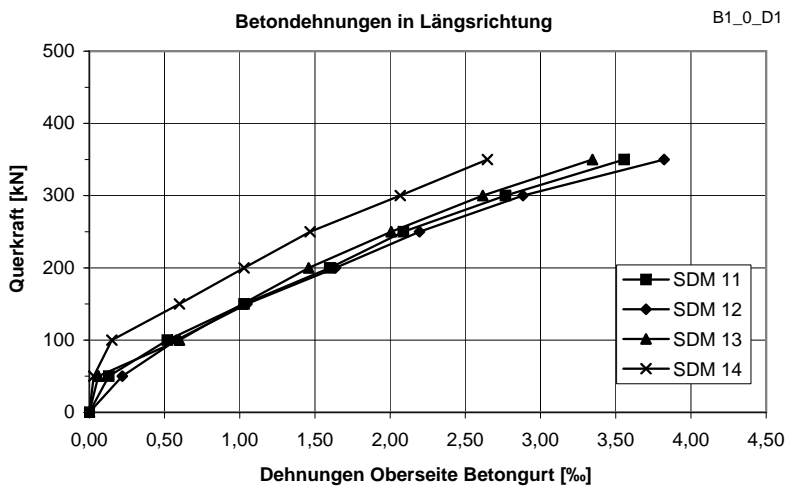
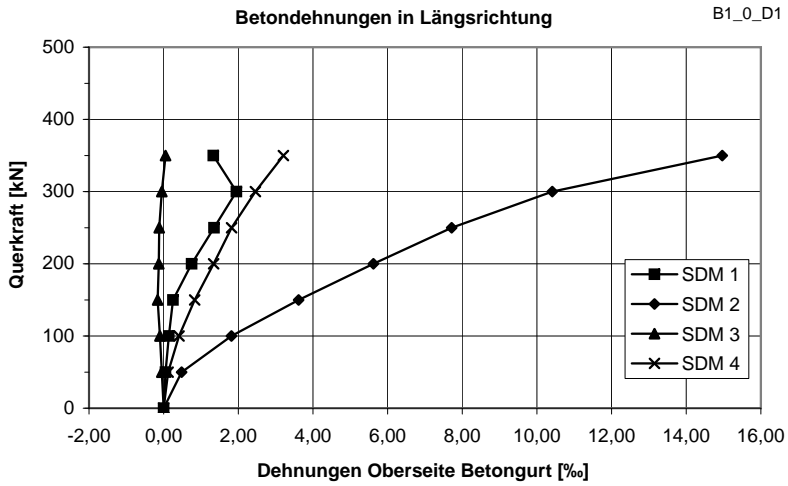
B.2.6. Querbewehrung

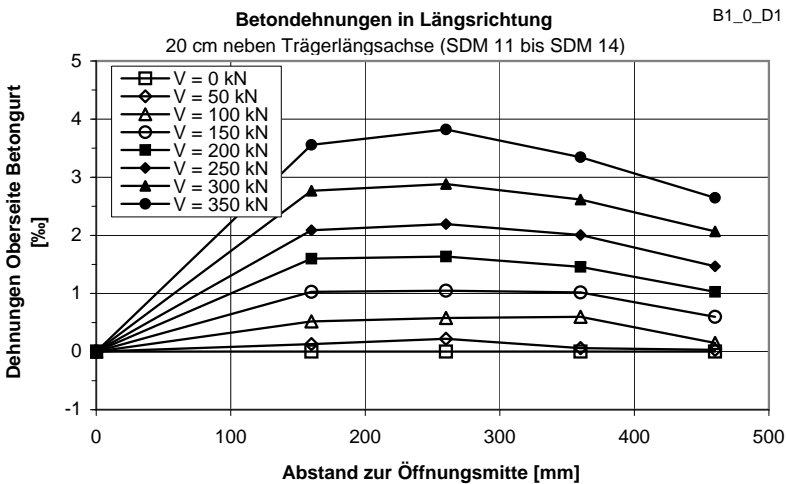
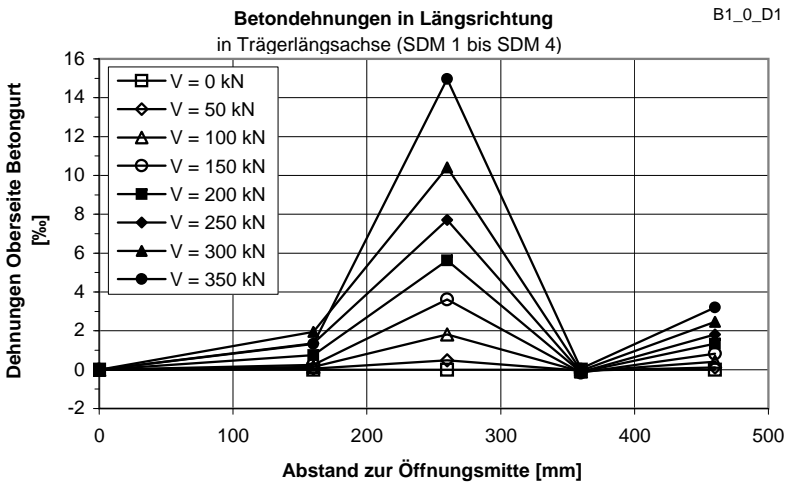
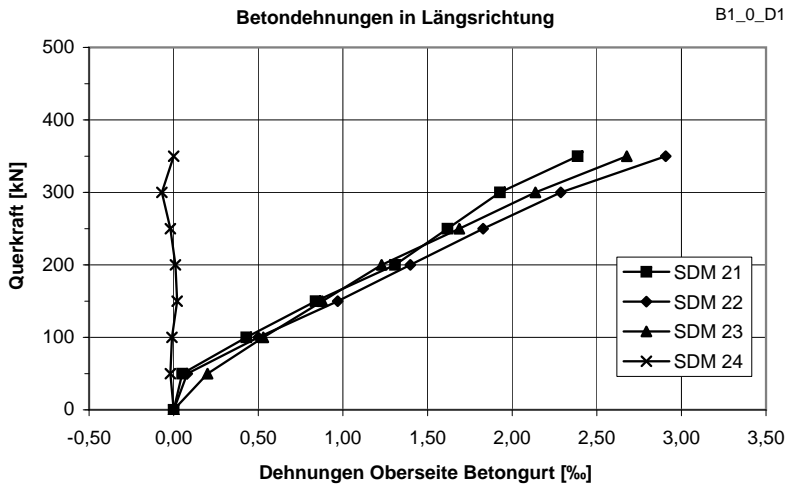


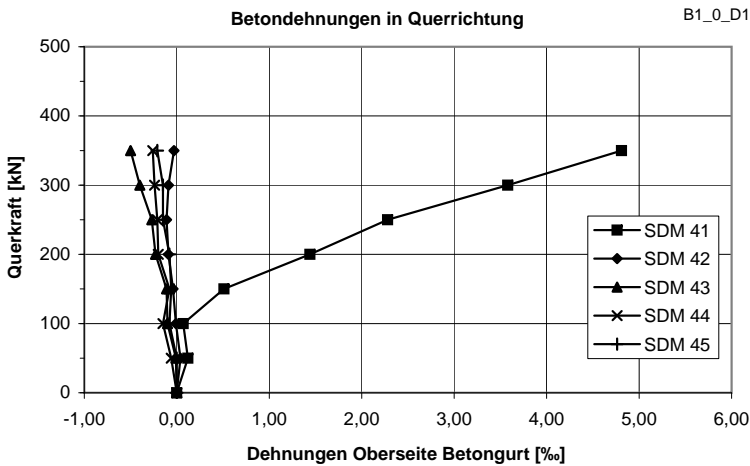
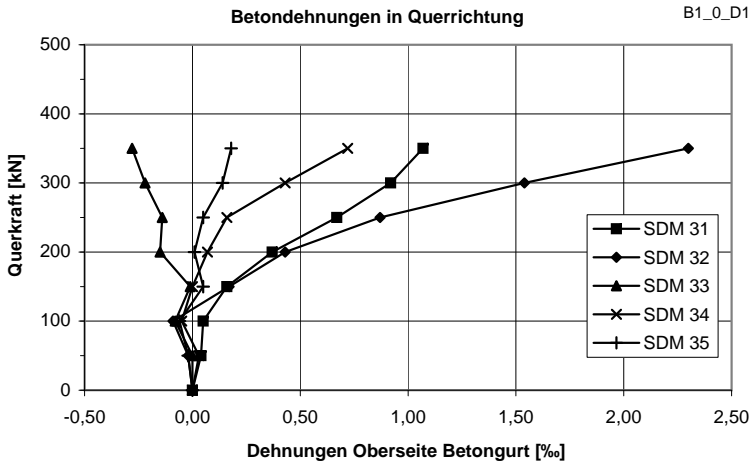
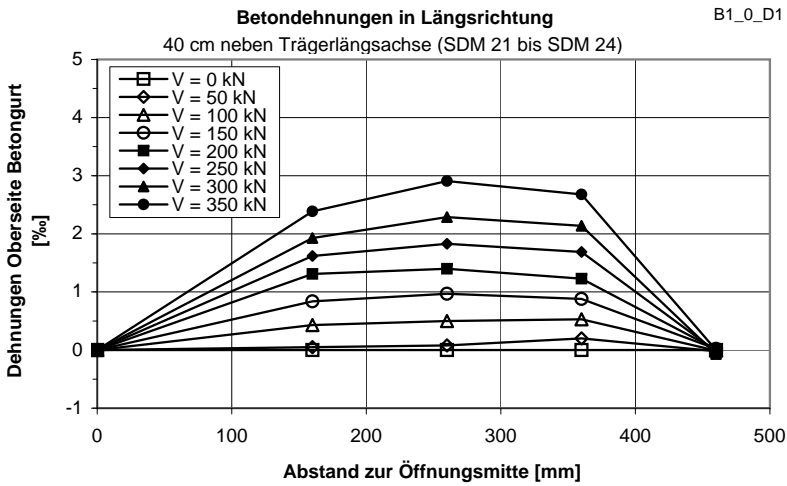


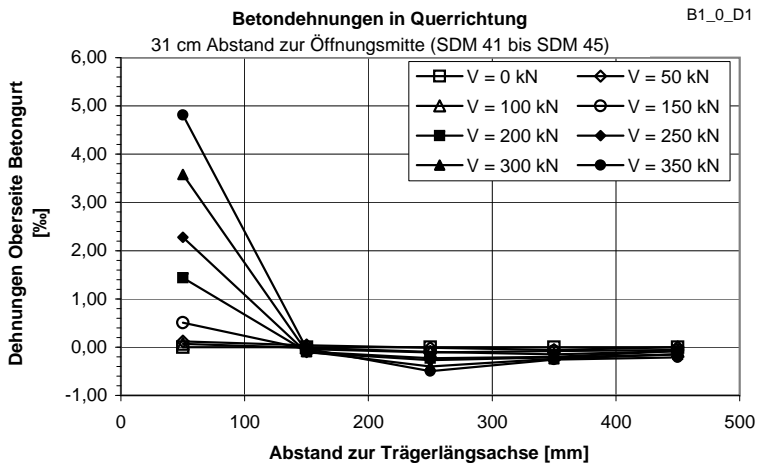
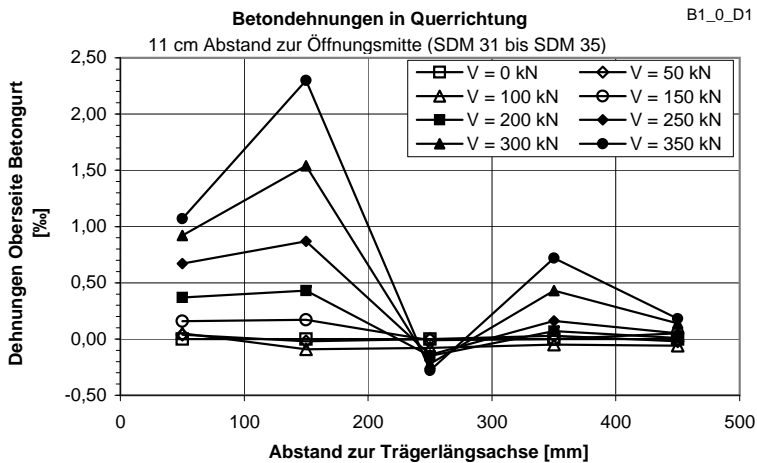
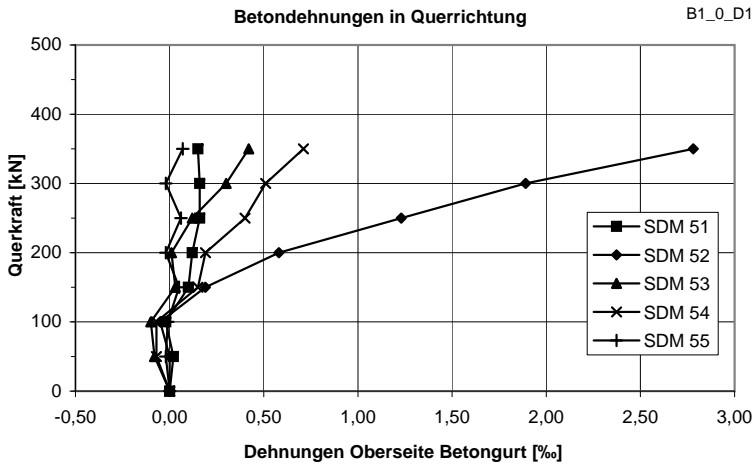


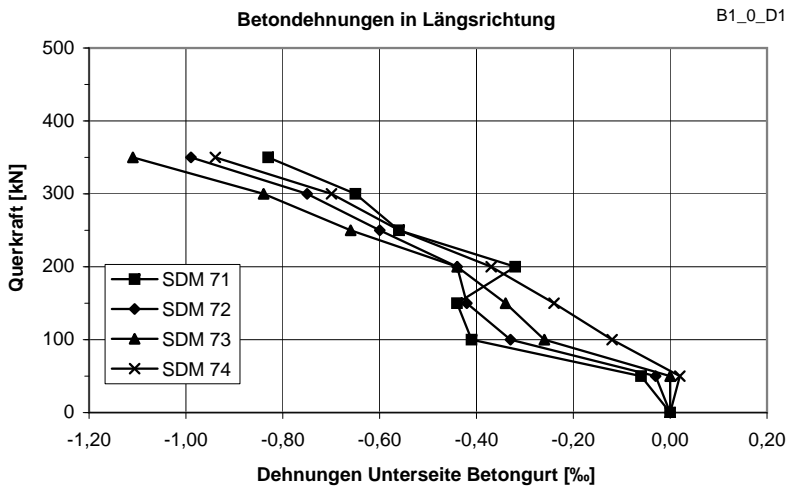
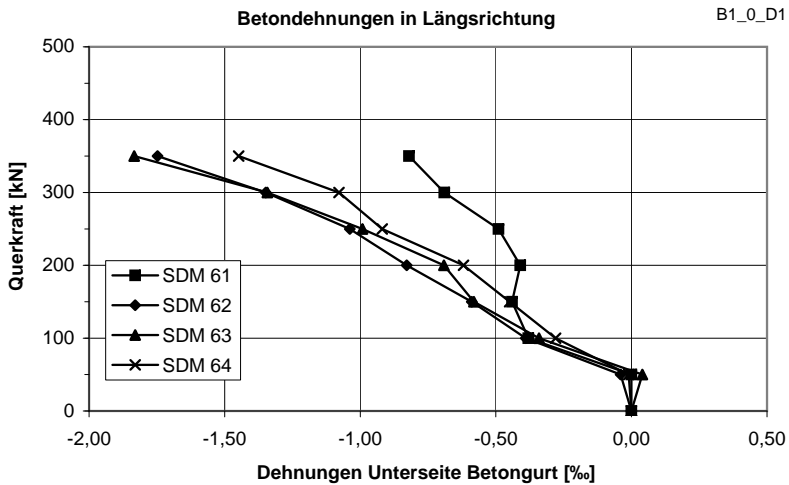
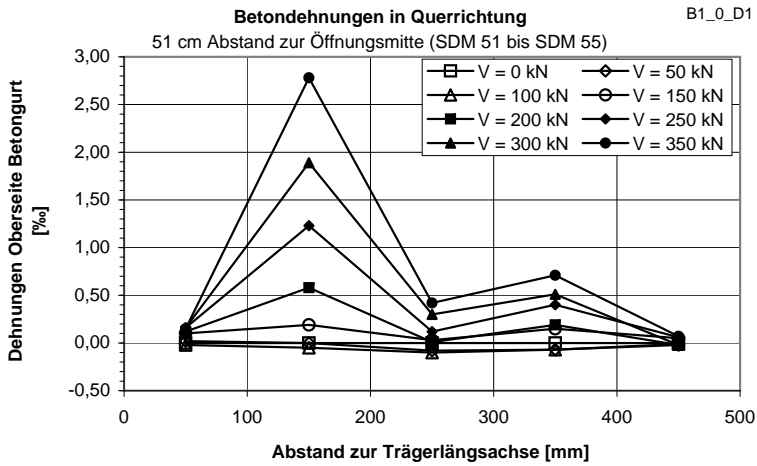
B.2.7. Betondehnungen

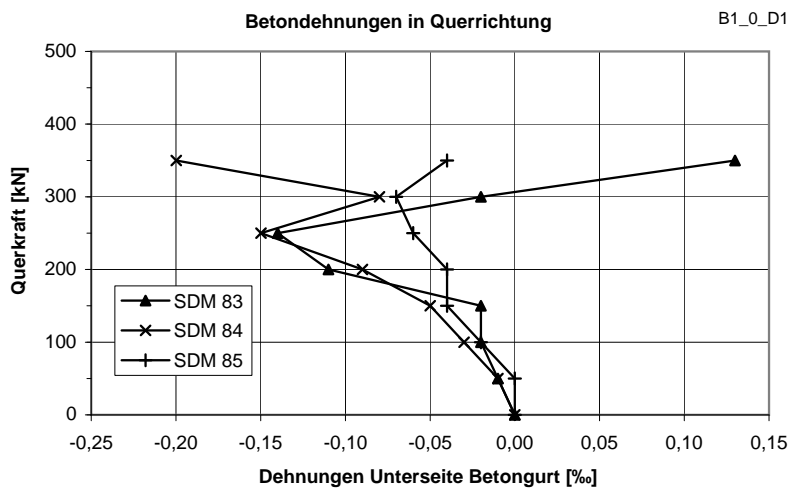
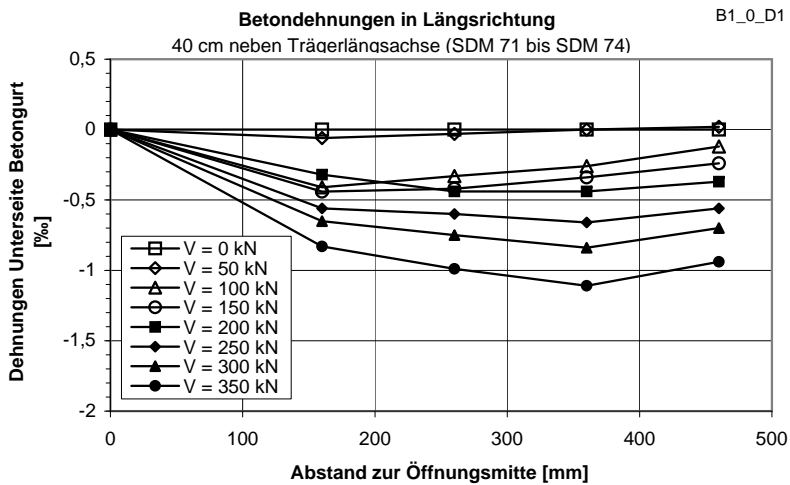
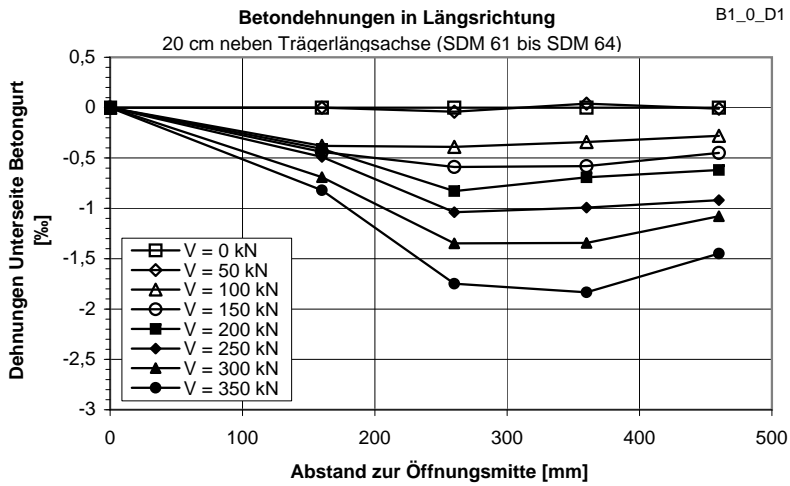


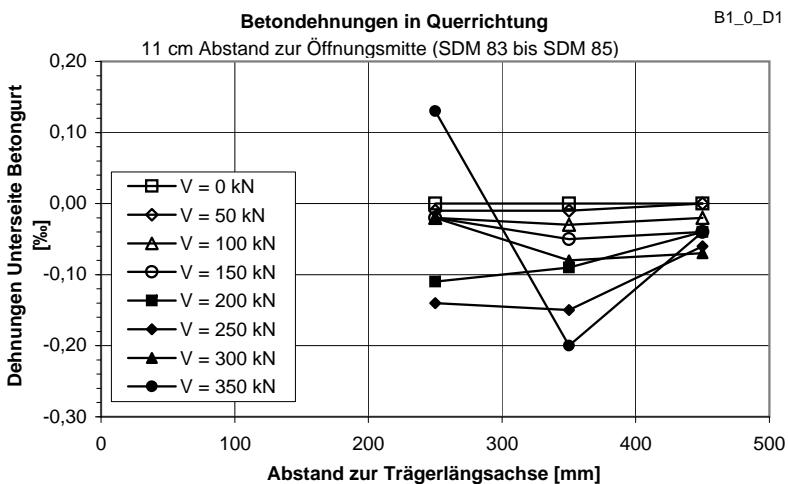
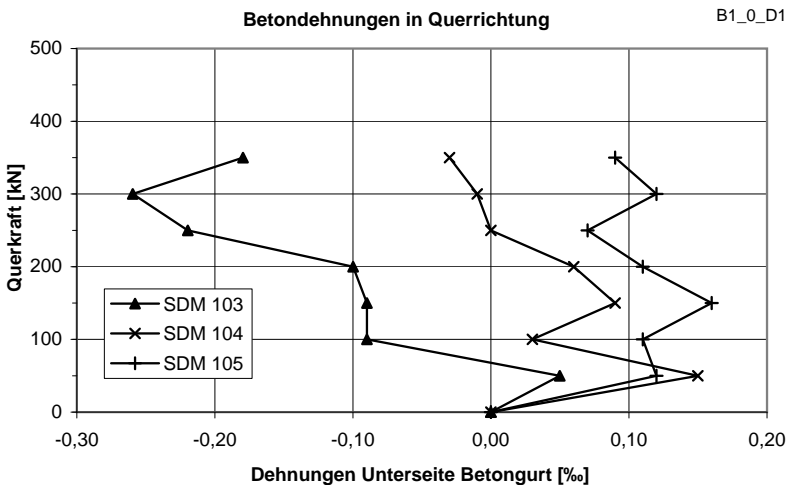
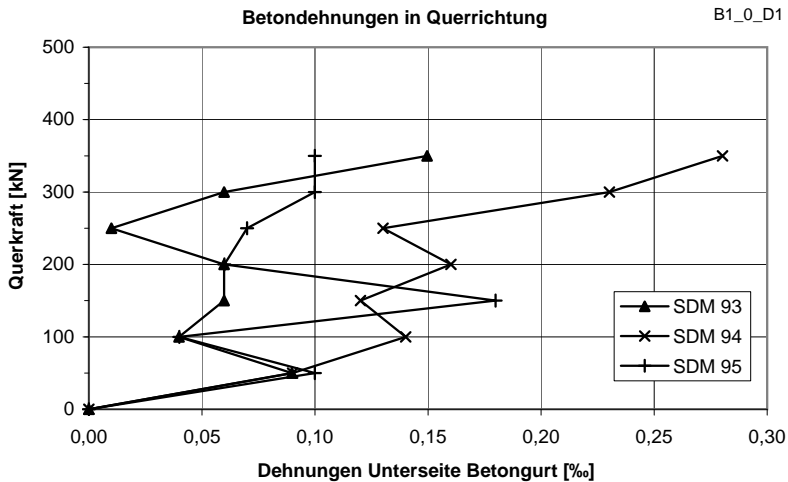


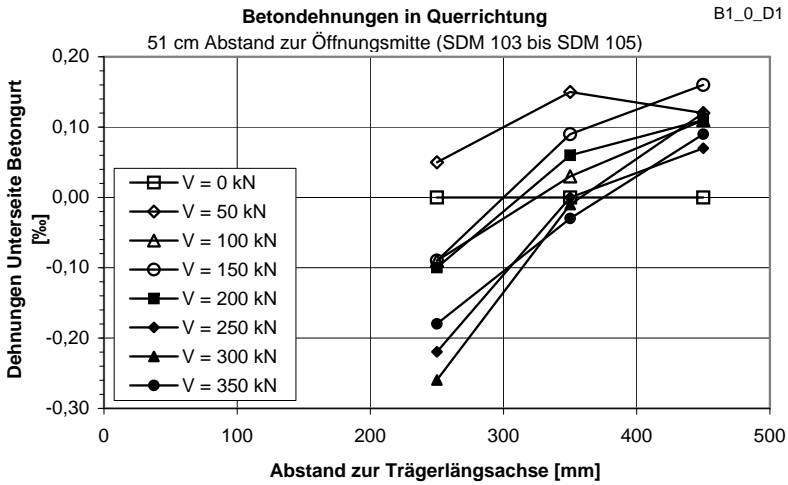
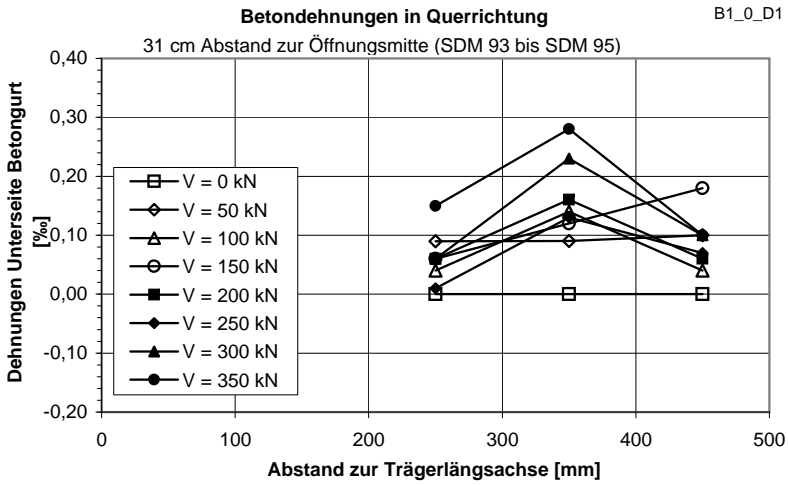






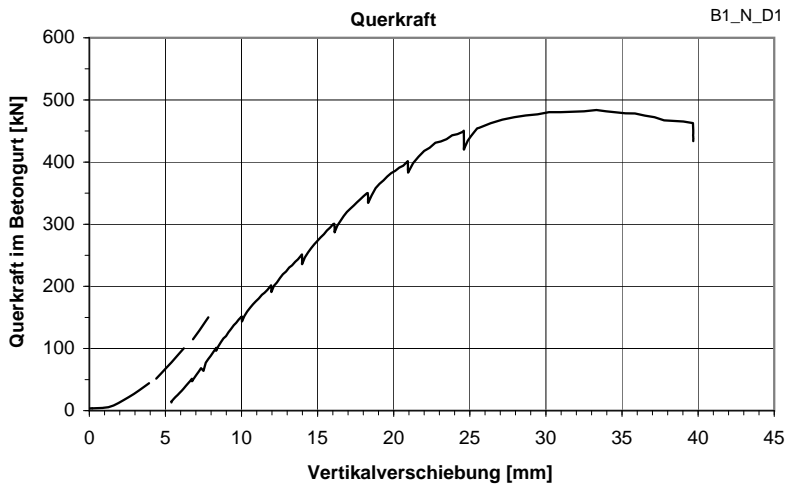
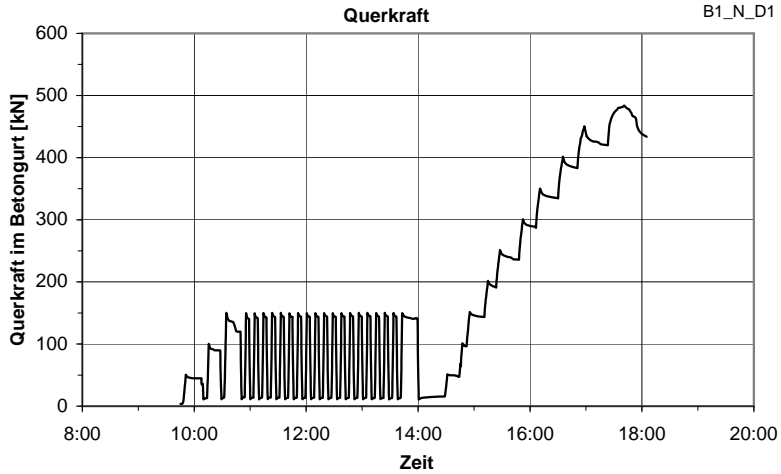


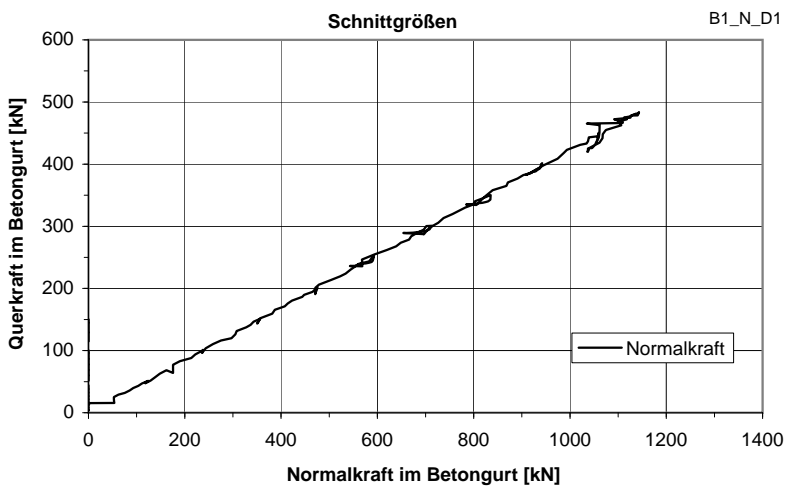
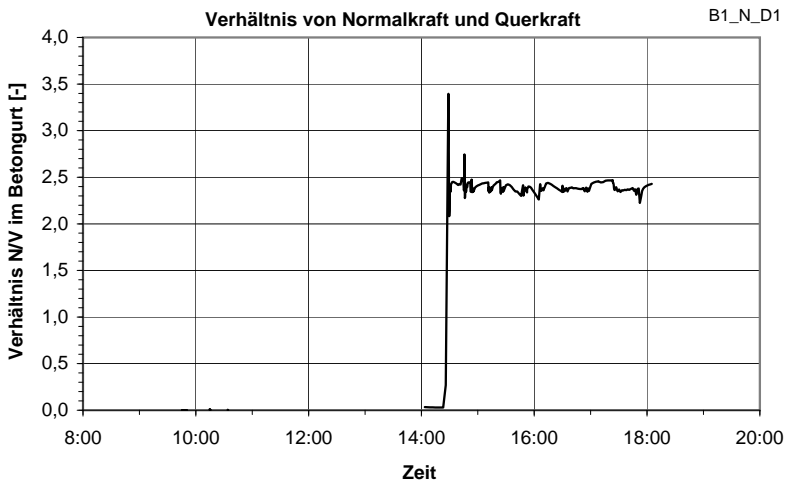
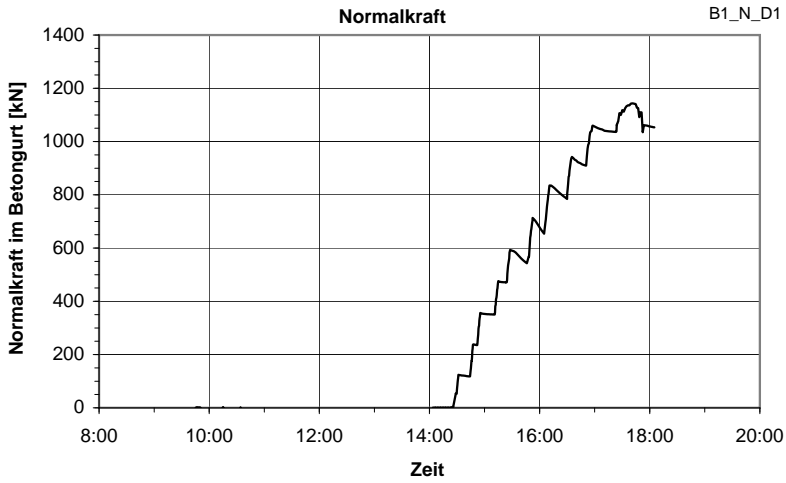


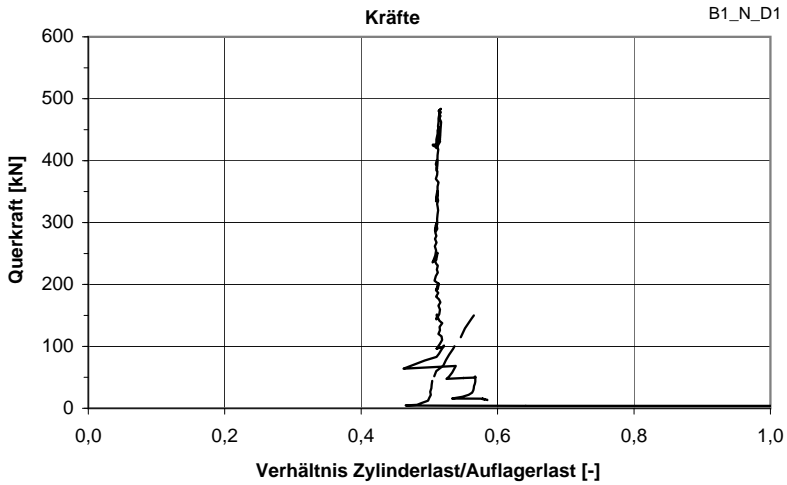
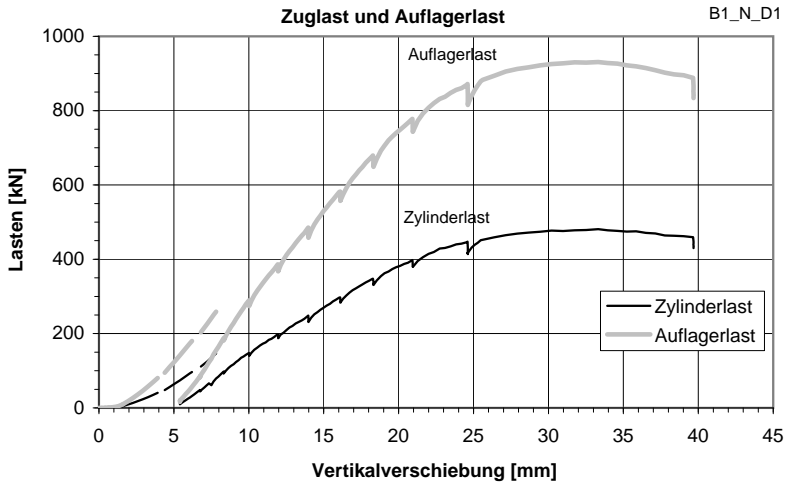


B.3. Versuch B1_N_D1

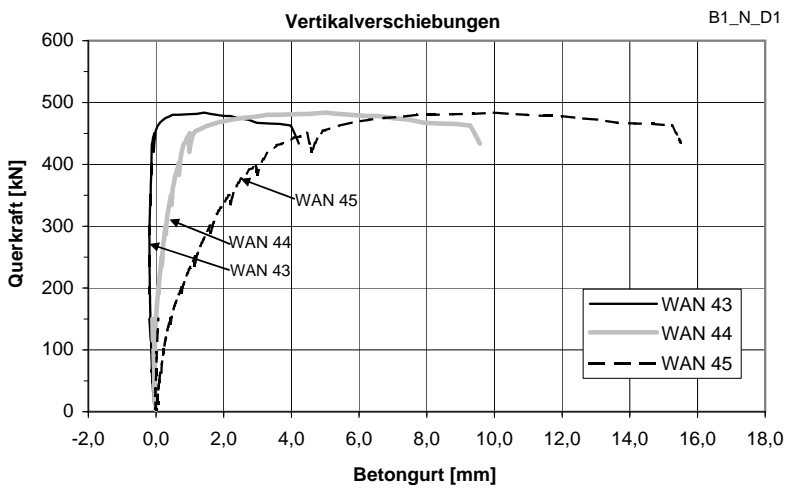
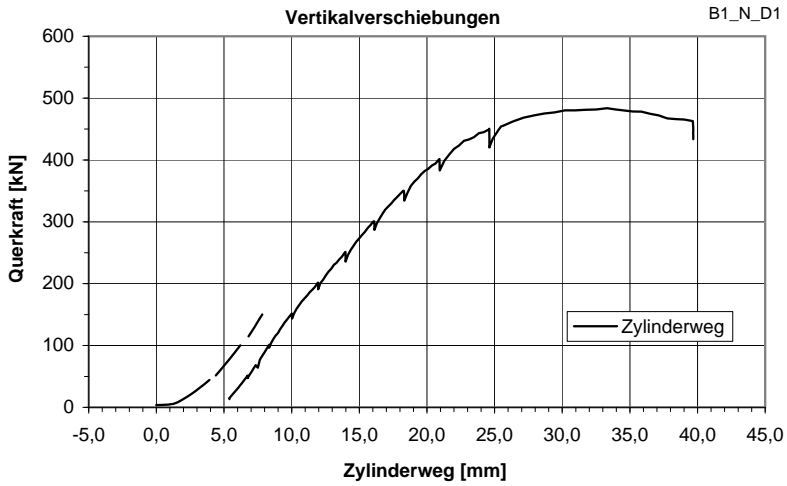
B.3.1. Kräfte

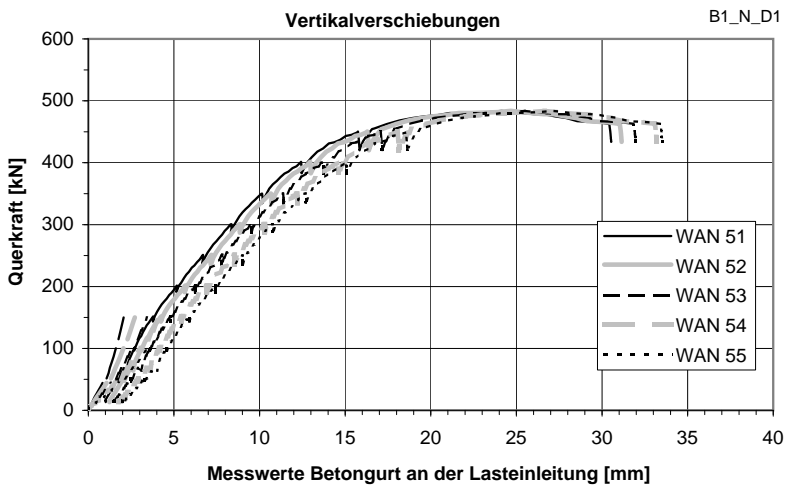
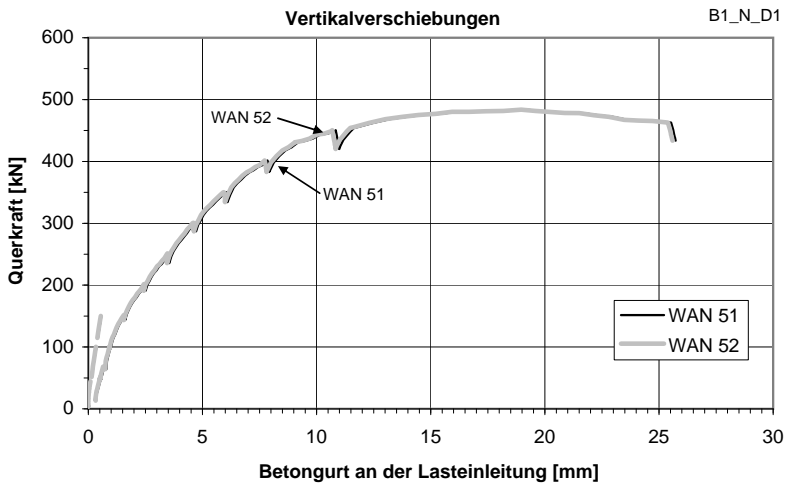
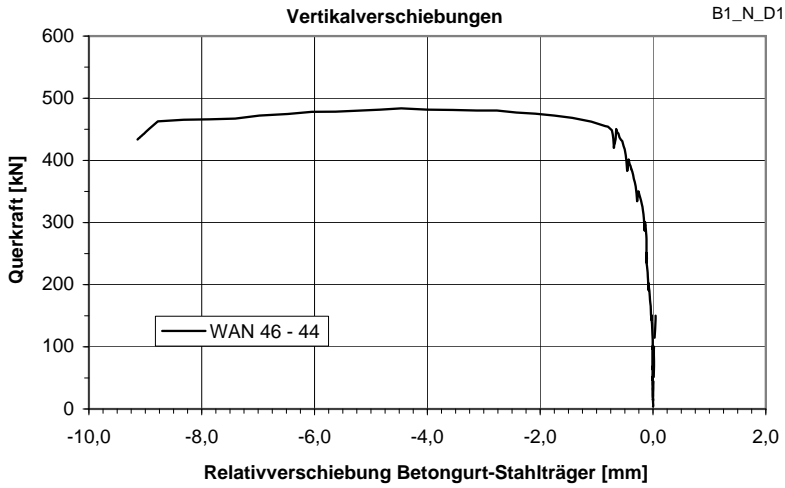




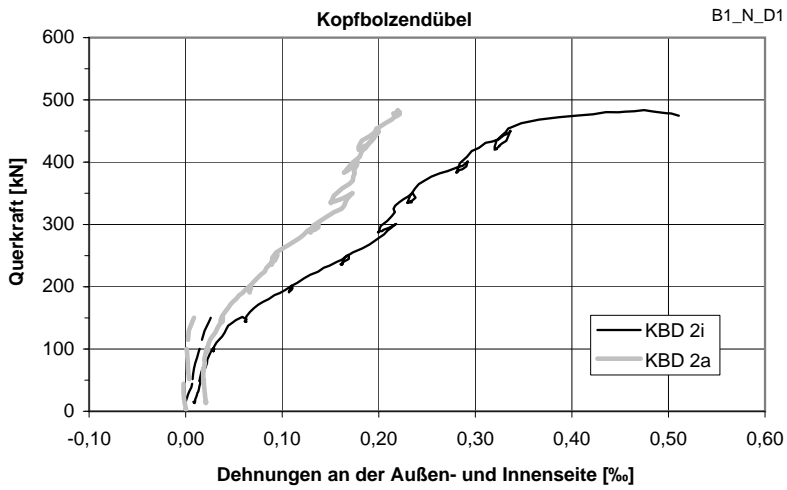
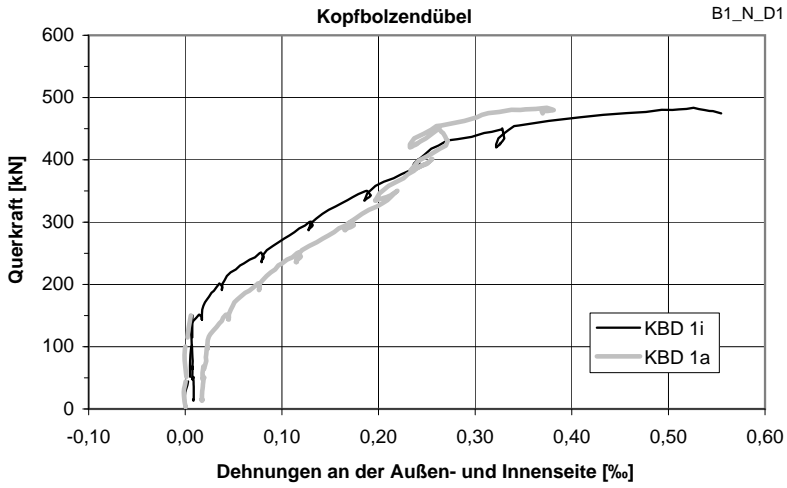


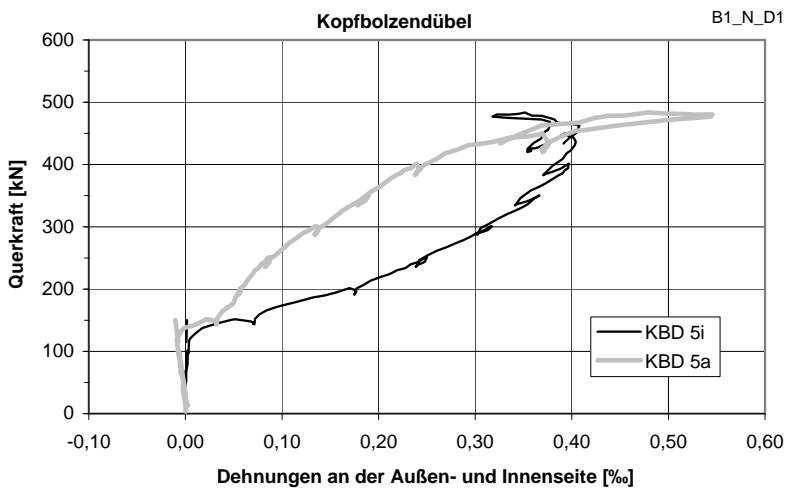
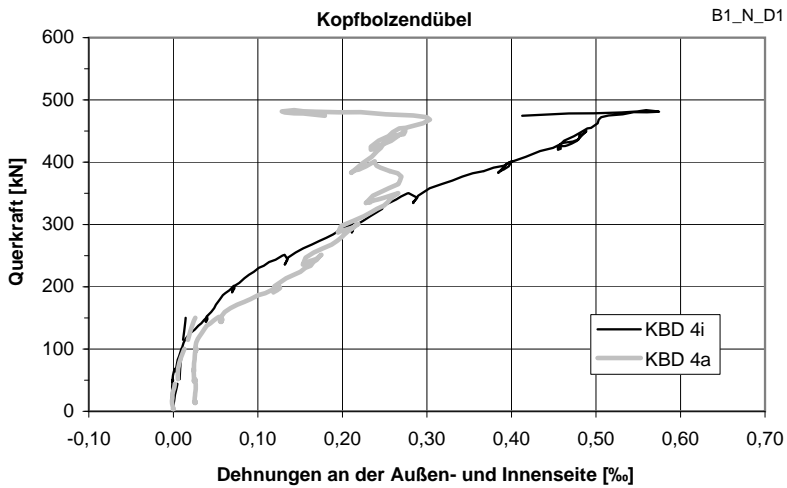
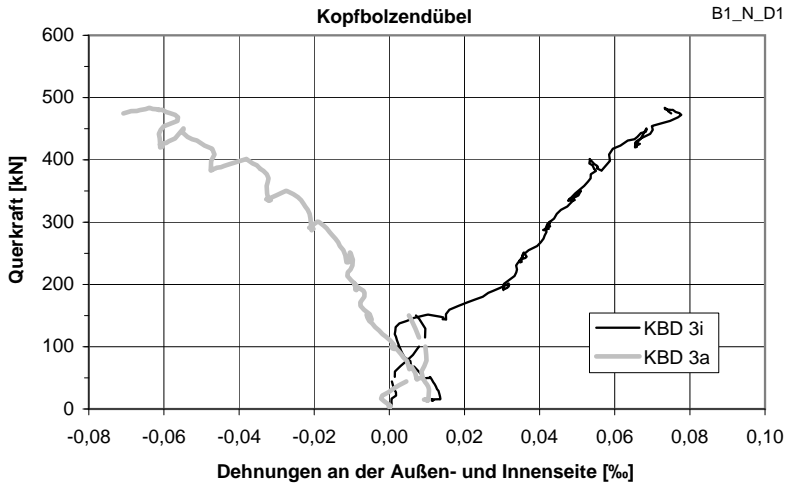
B.3.2. Verformungen

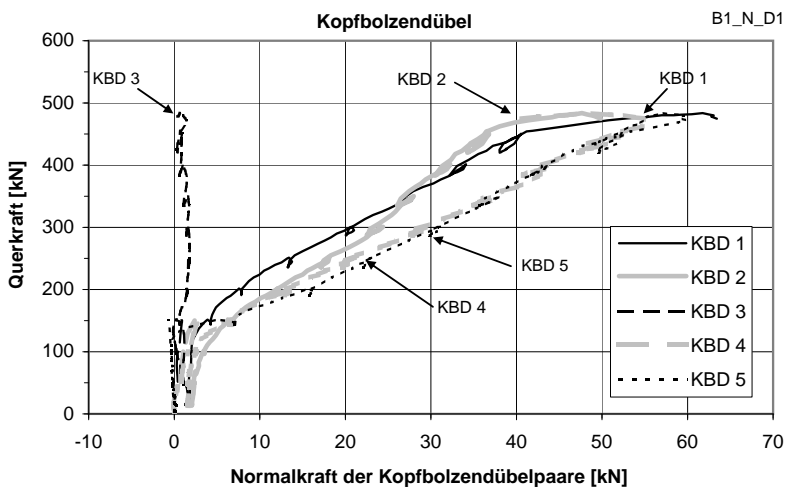
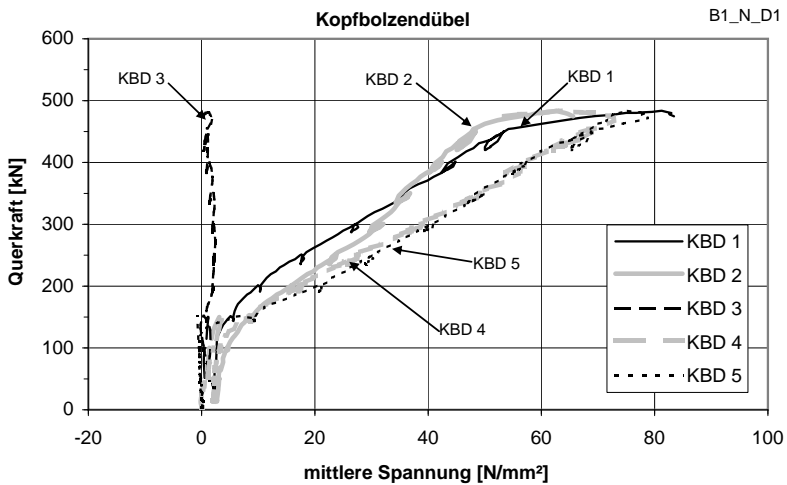
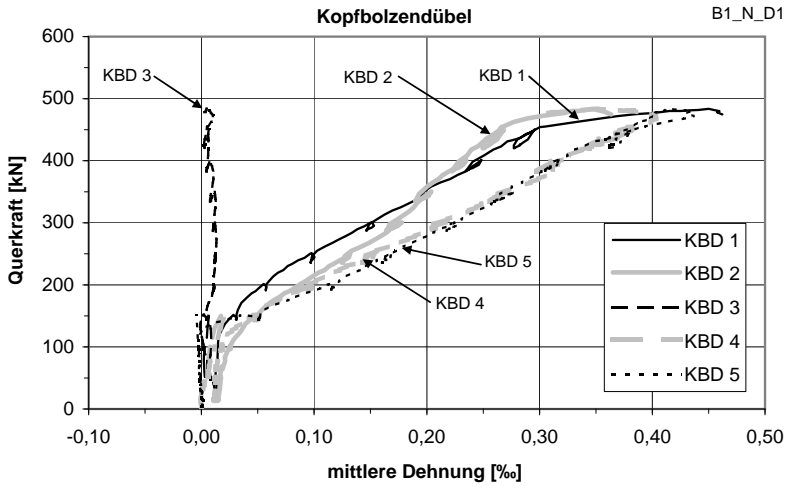




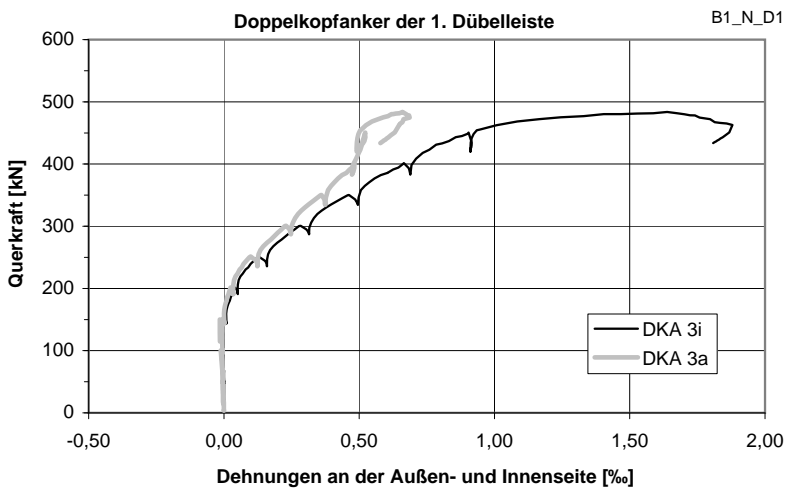
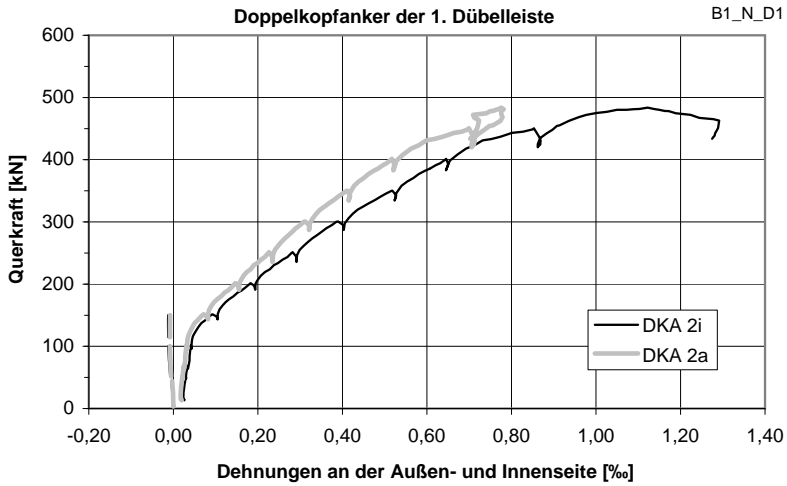
B.3.3. Kopfbolzendübel

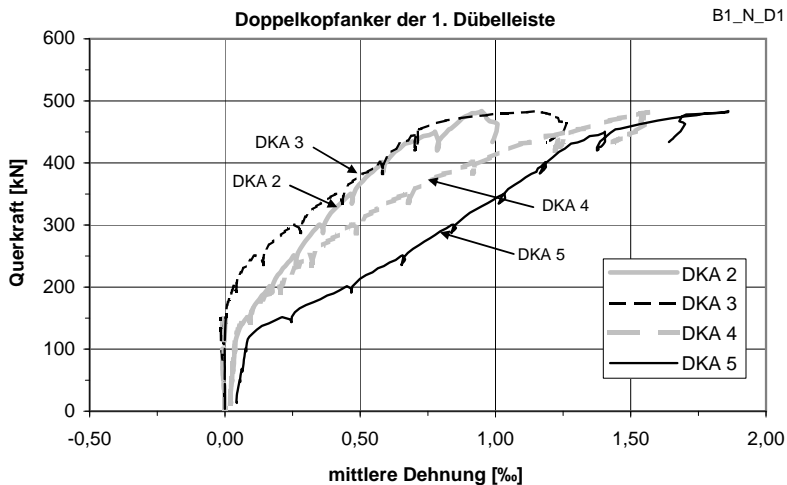
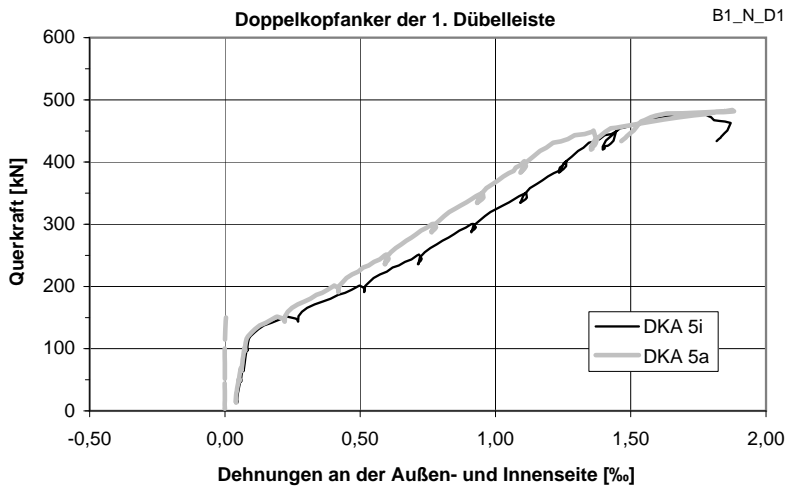
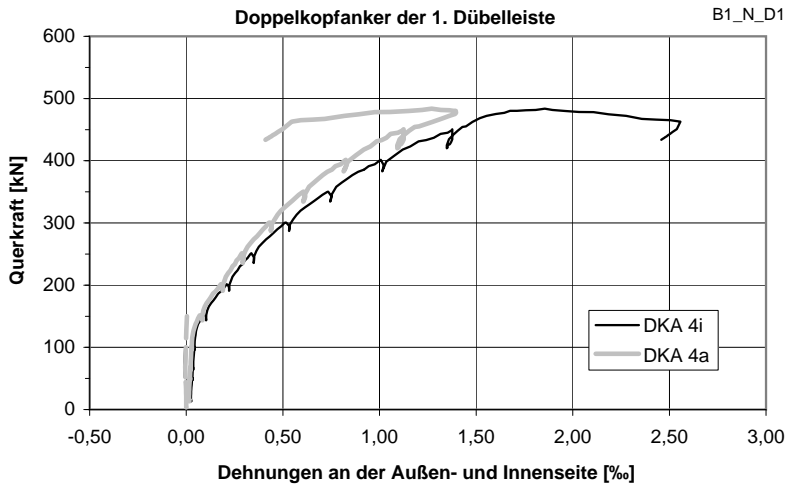


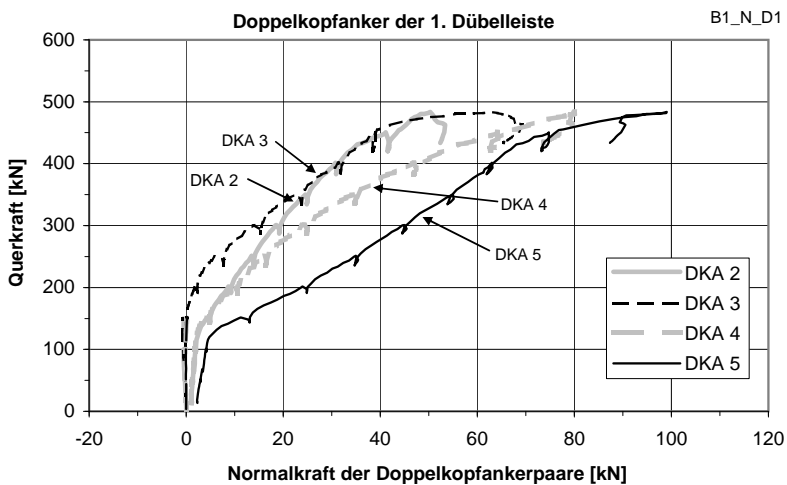
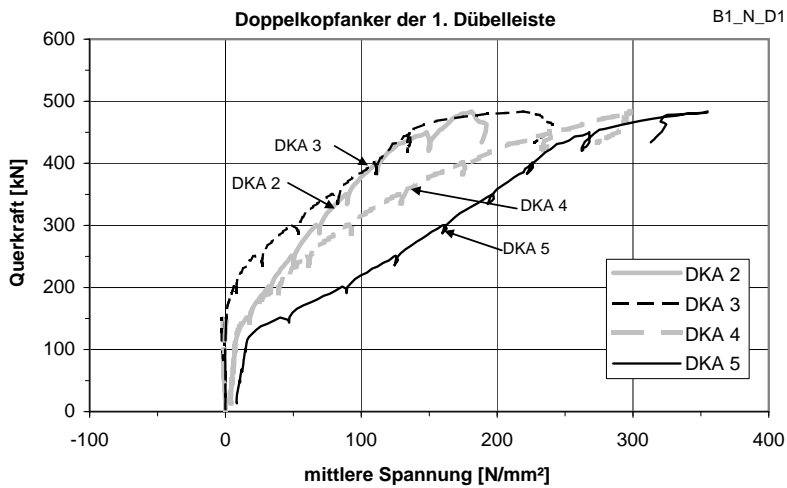




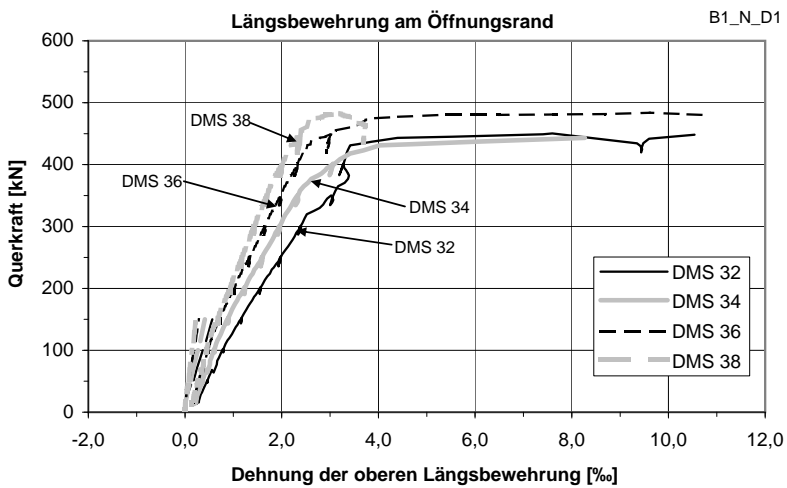
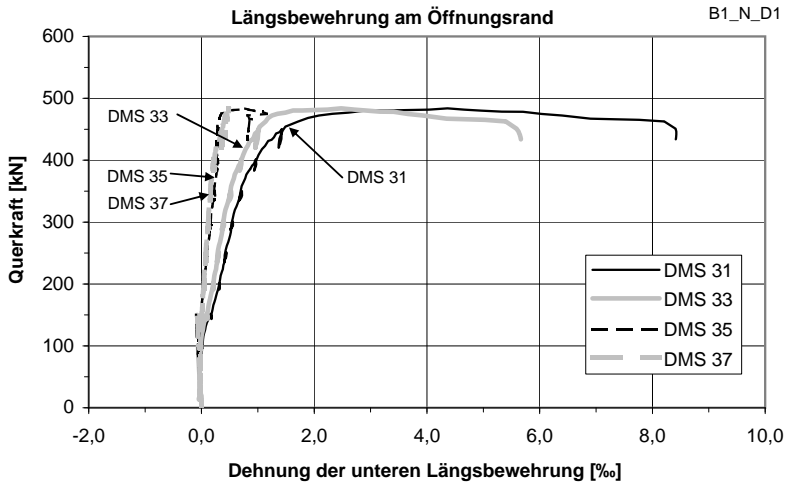
B.3.4. Doppelkopfanker

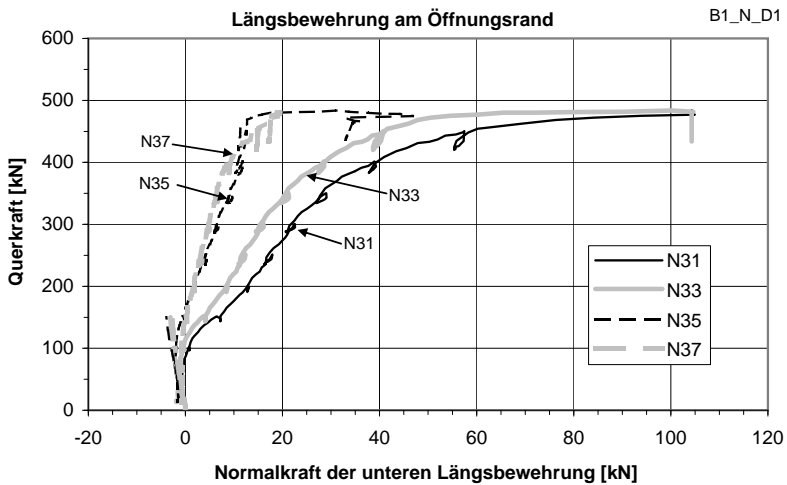
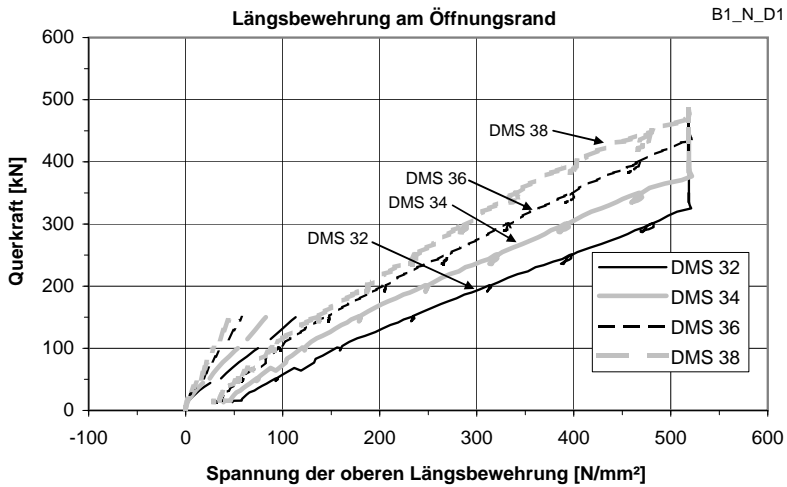
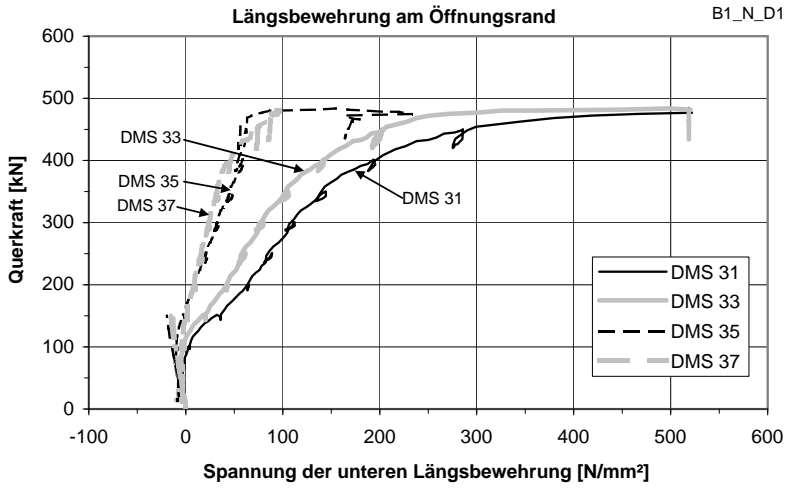


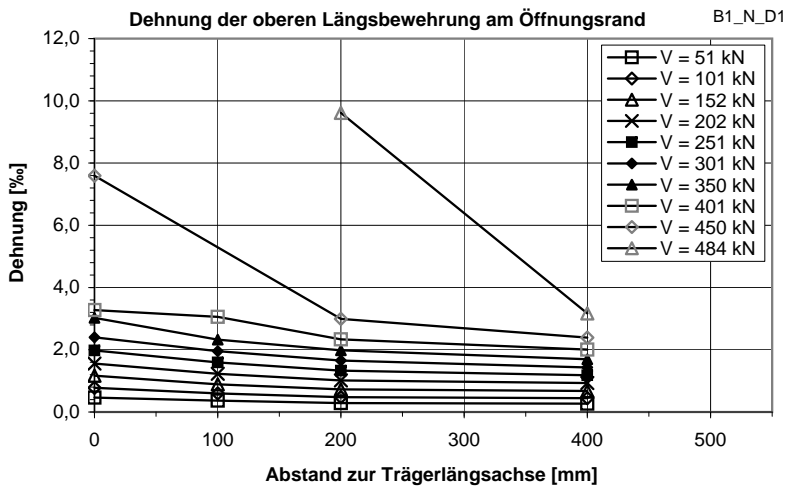
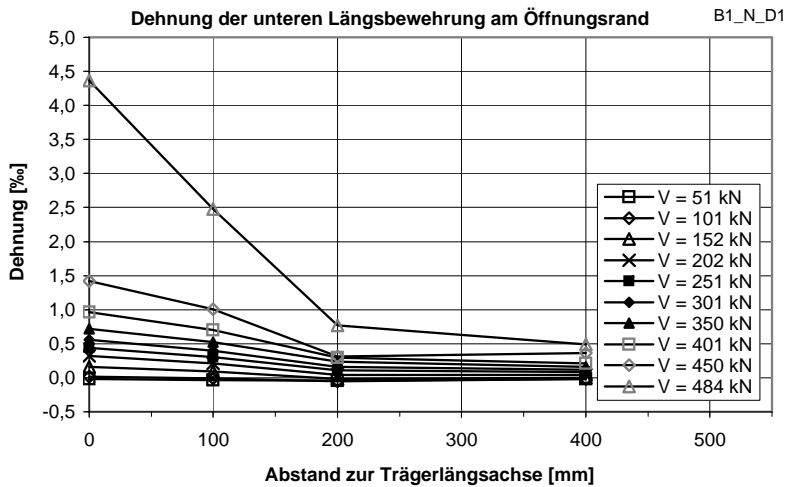
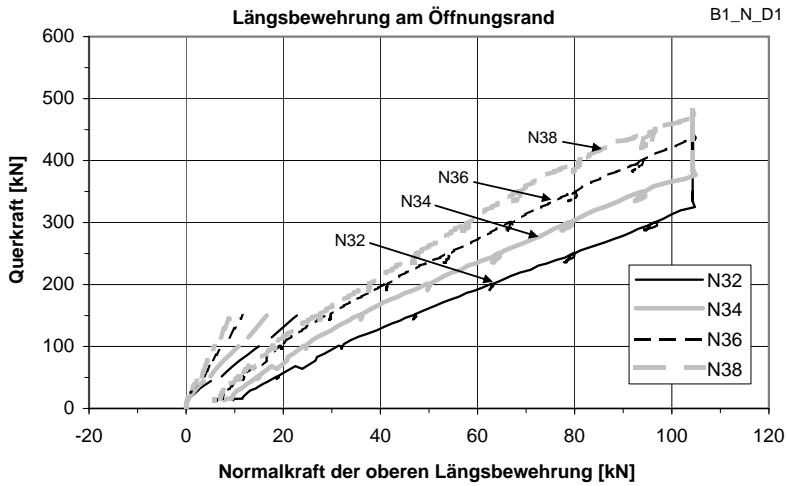


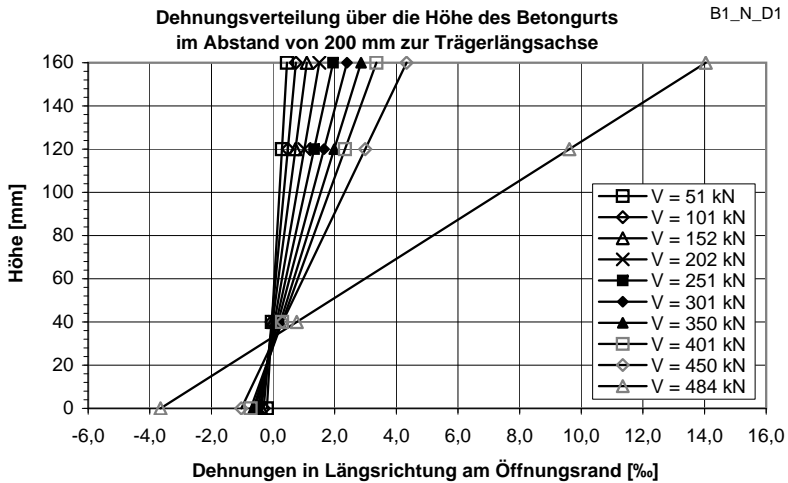
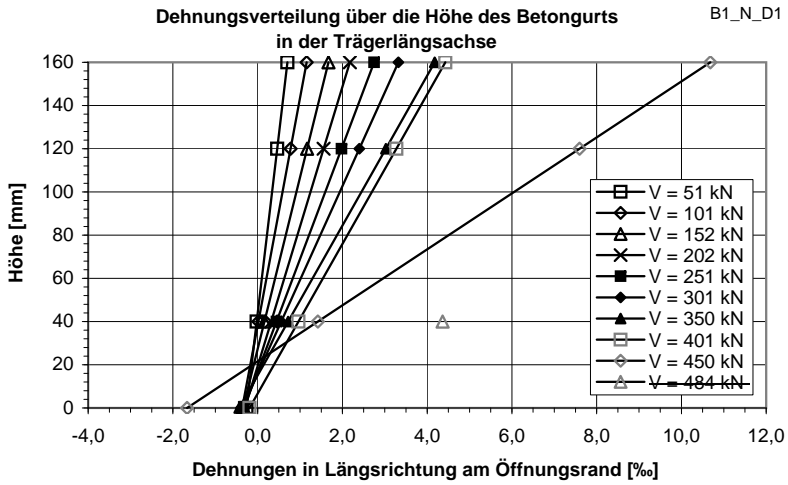


B.3.5. Längsbewehrung

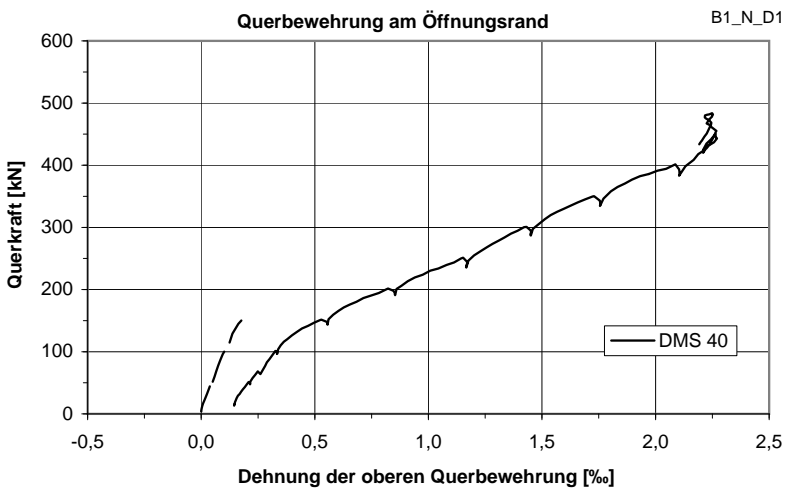
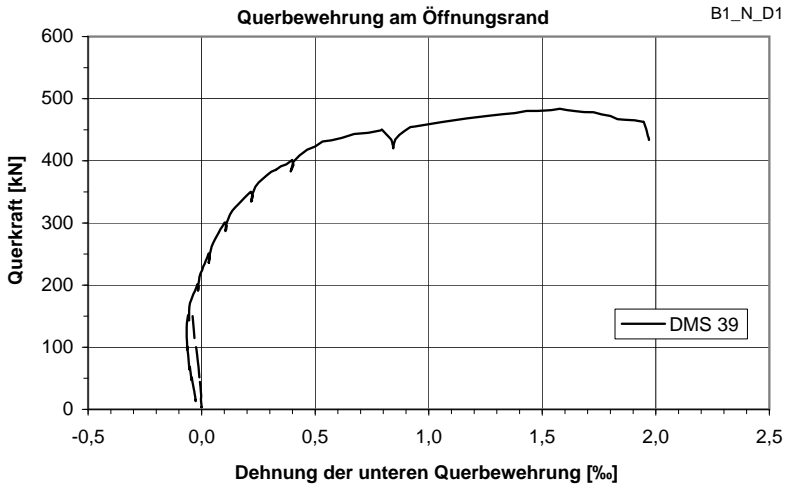


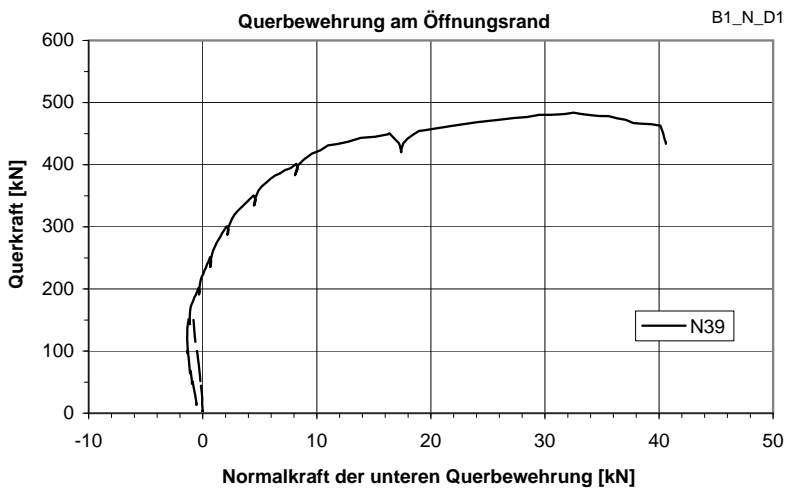
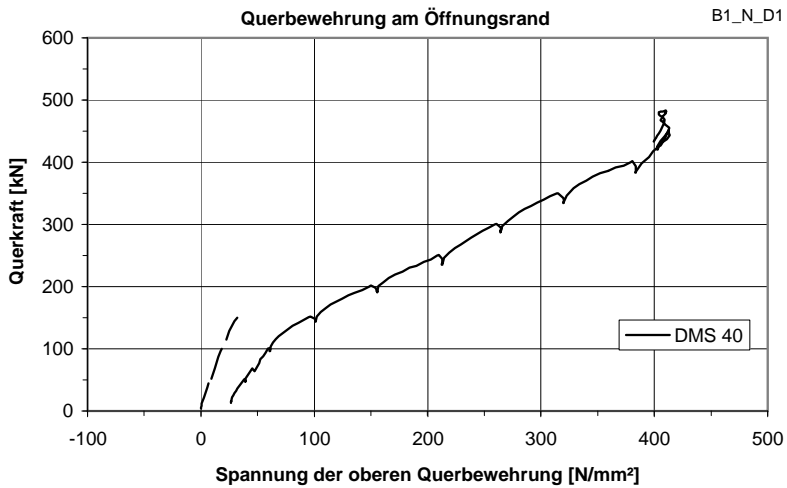
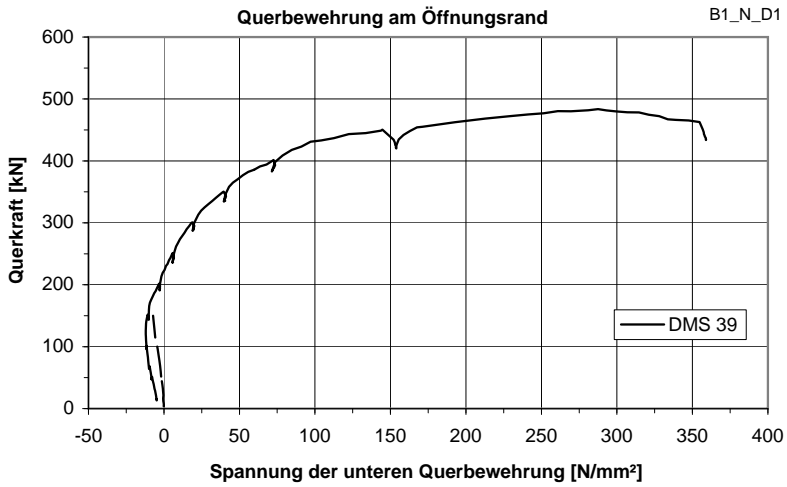


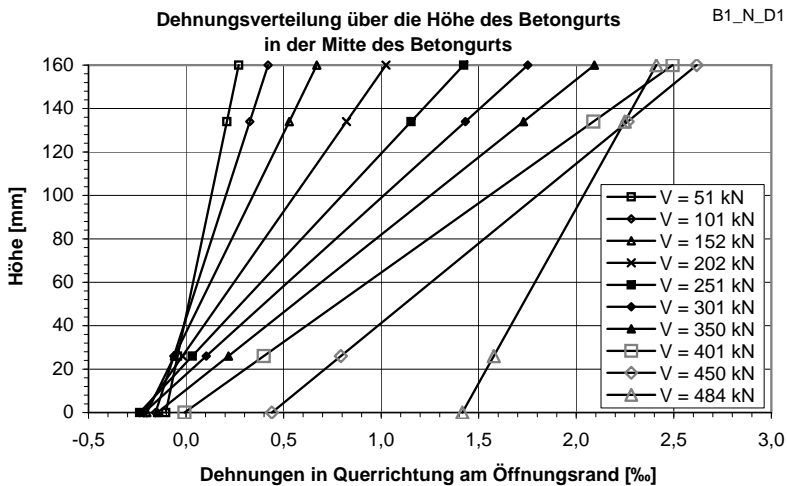
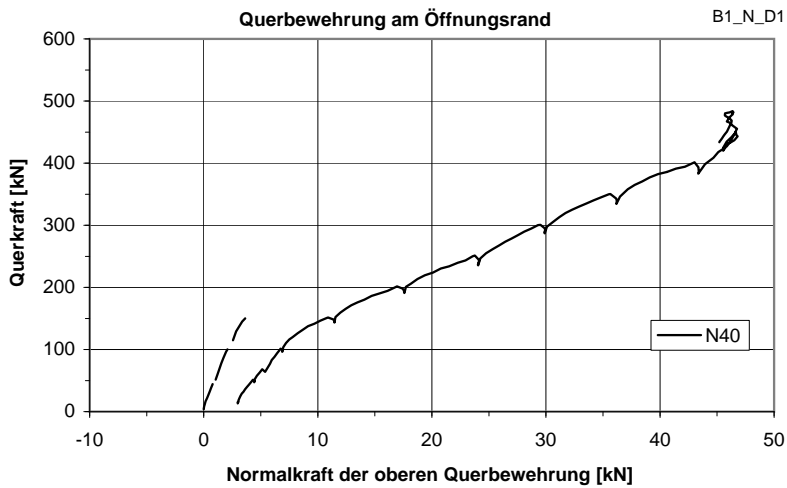




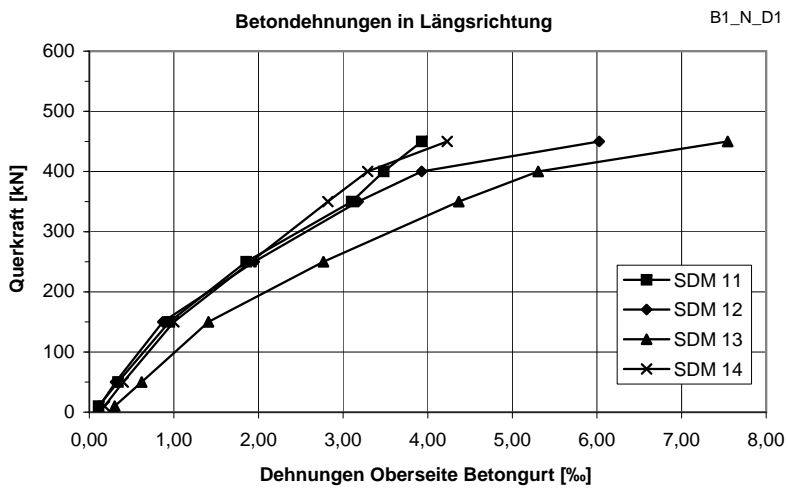
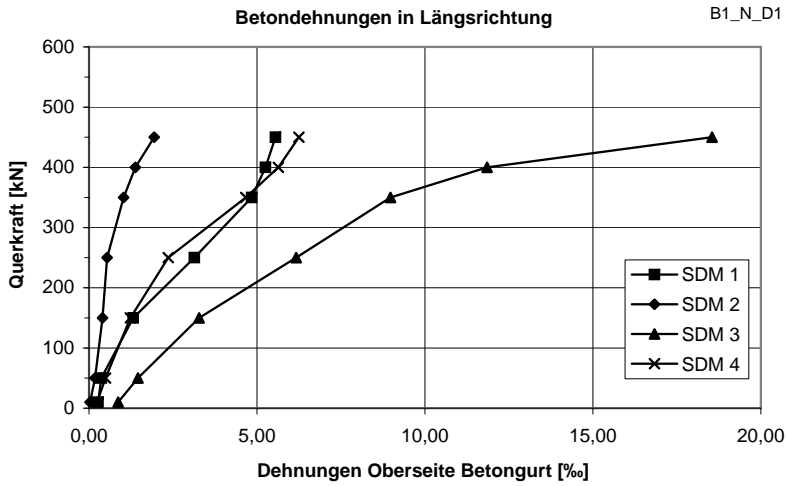
B.3.6. Querbewehrung

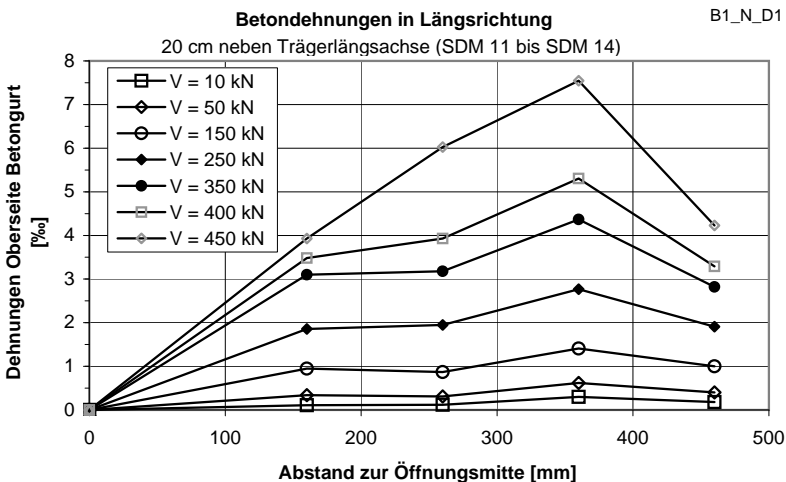
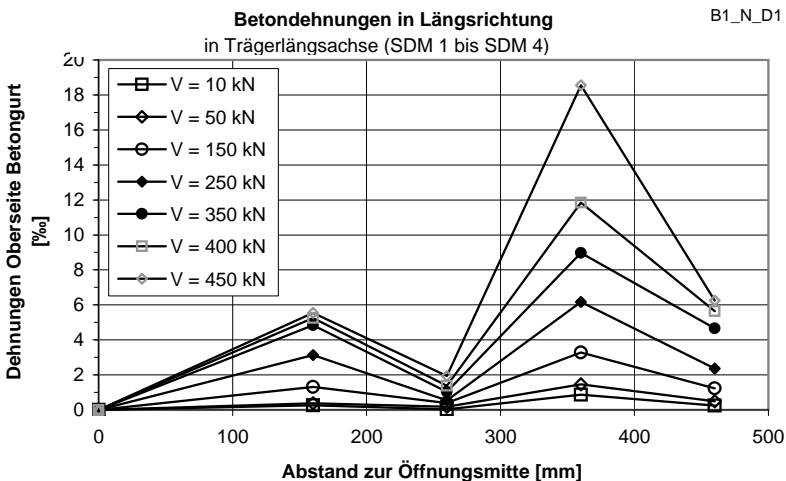
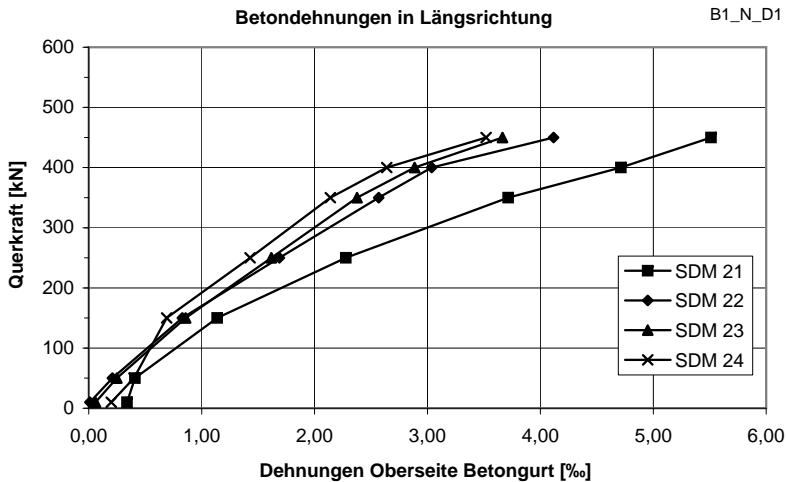


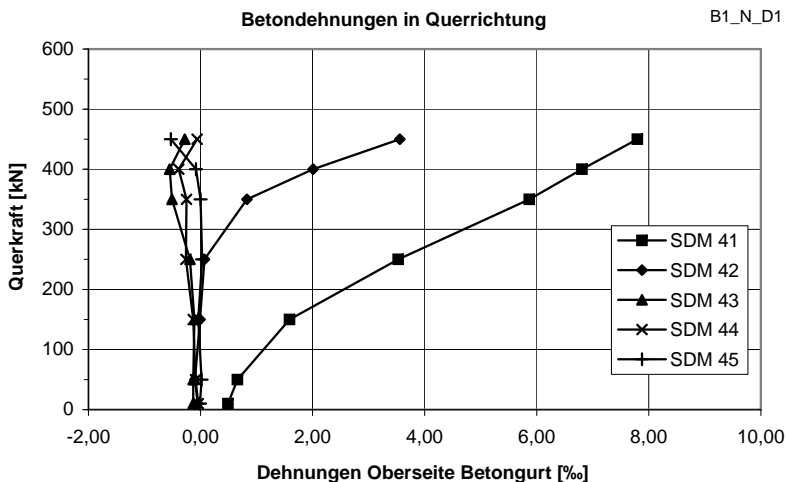
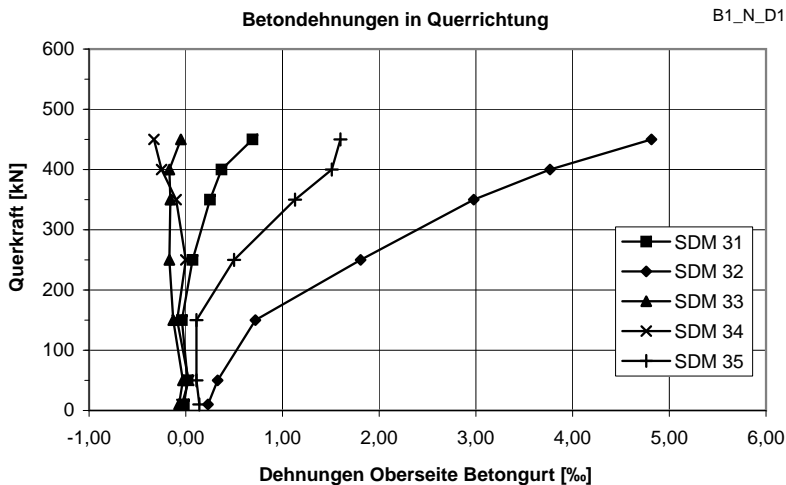
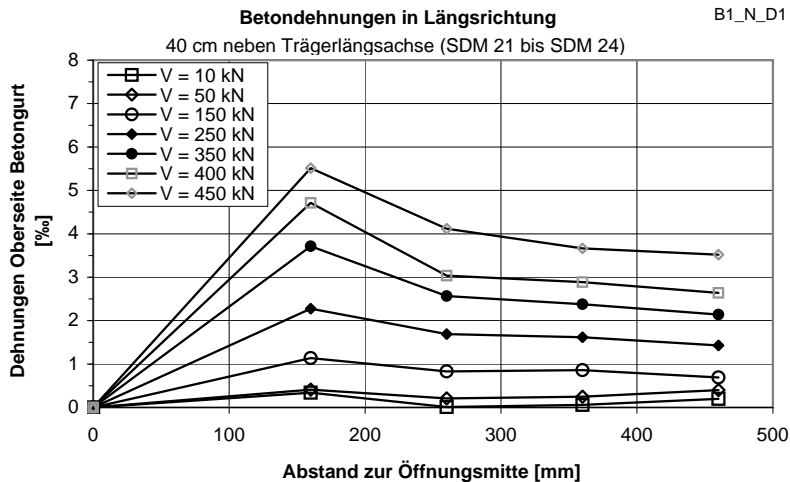


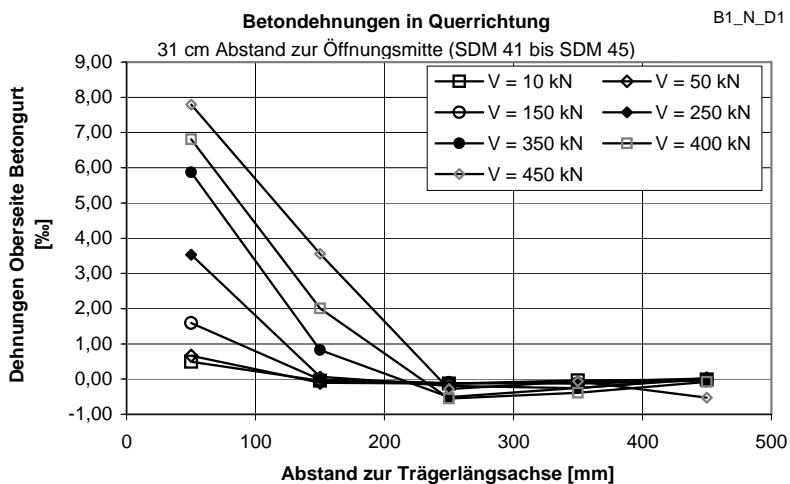
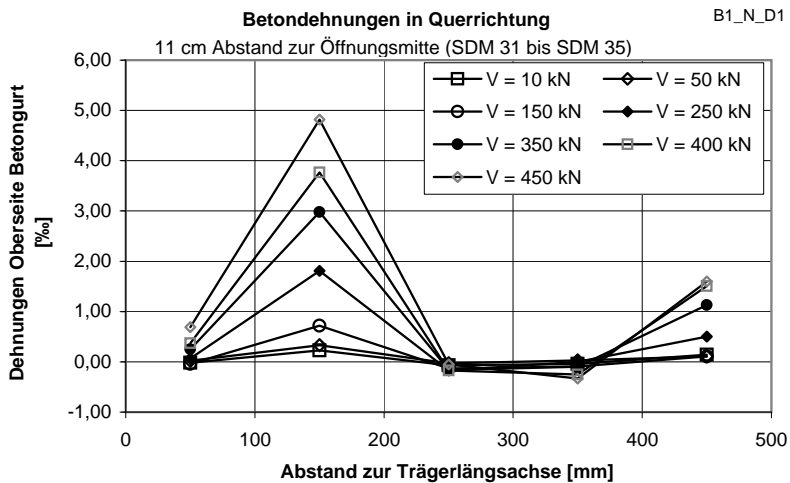
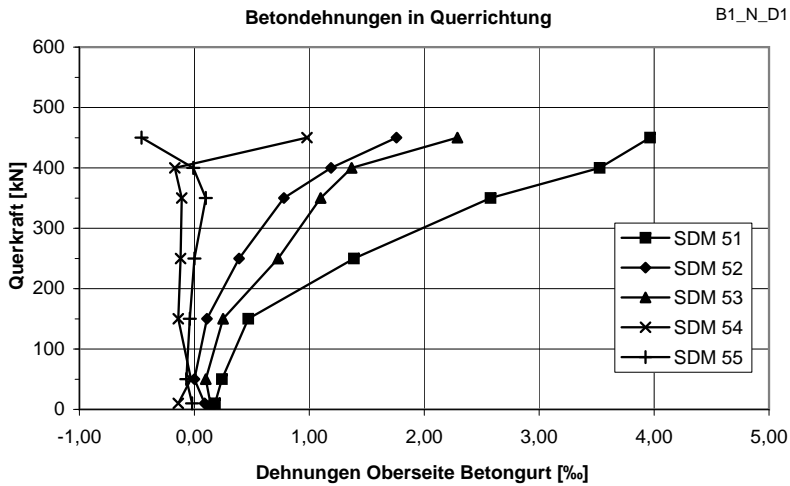


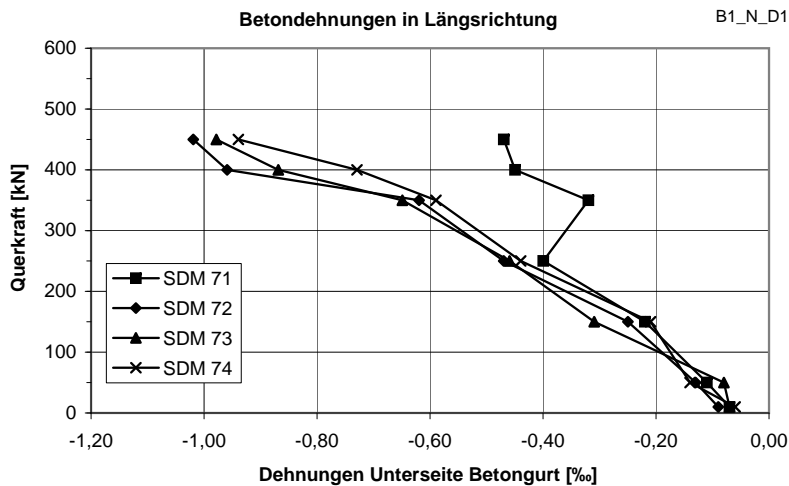
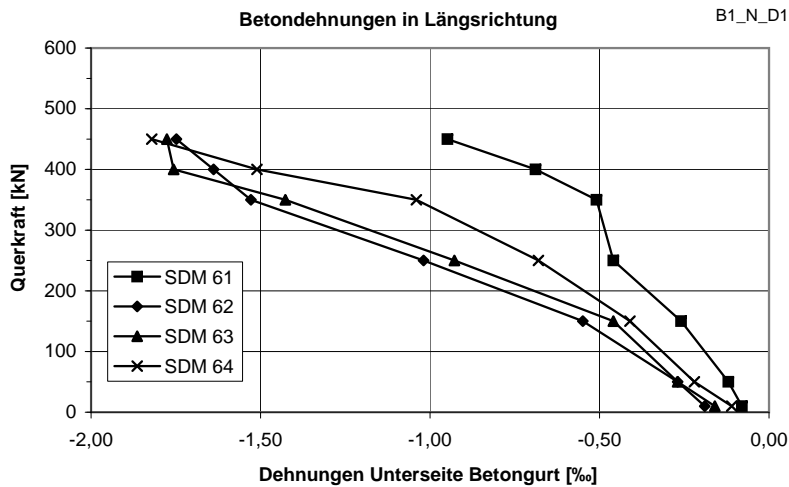
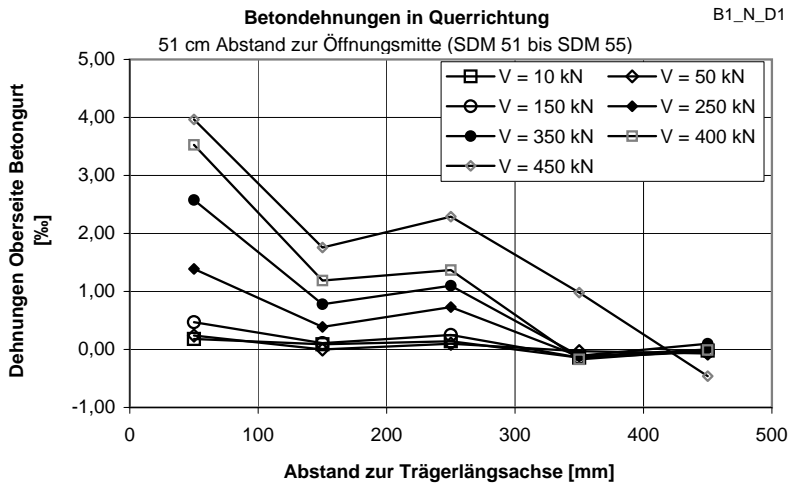
B.3.7. Betondehnungen

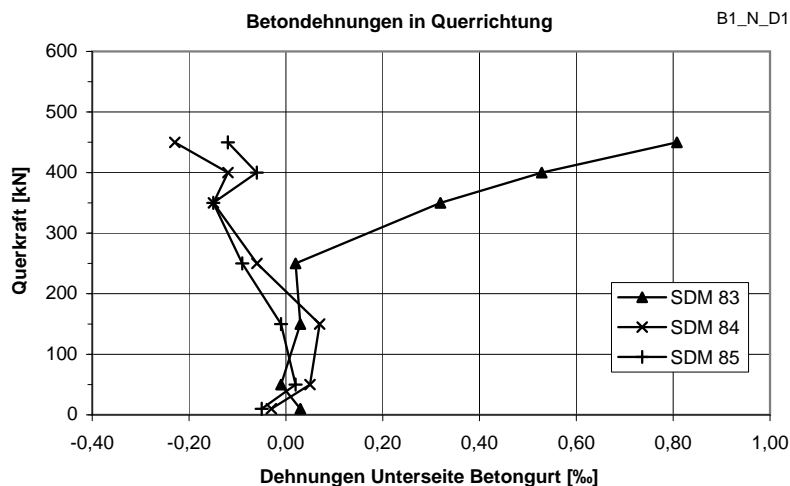
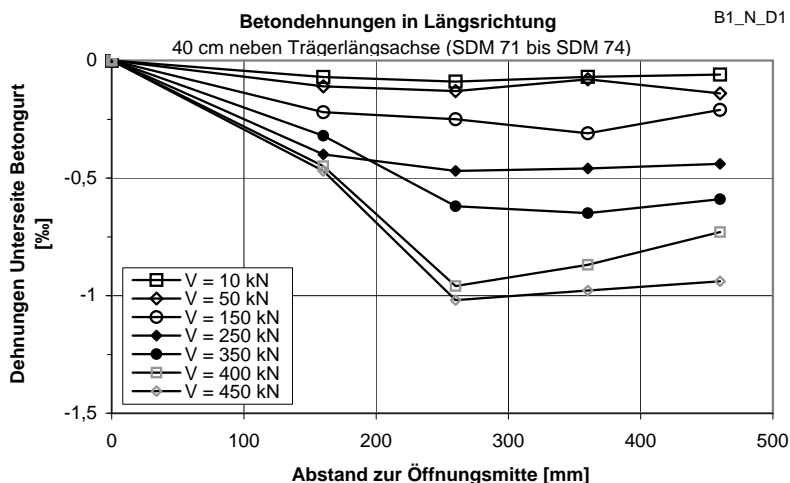
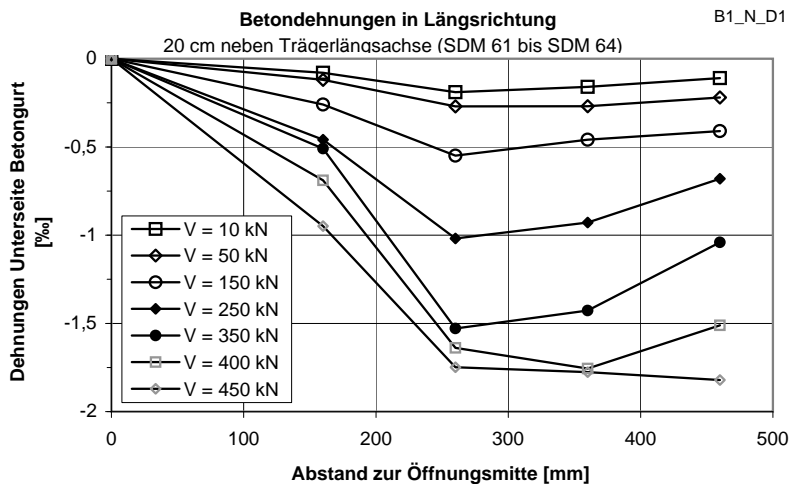


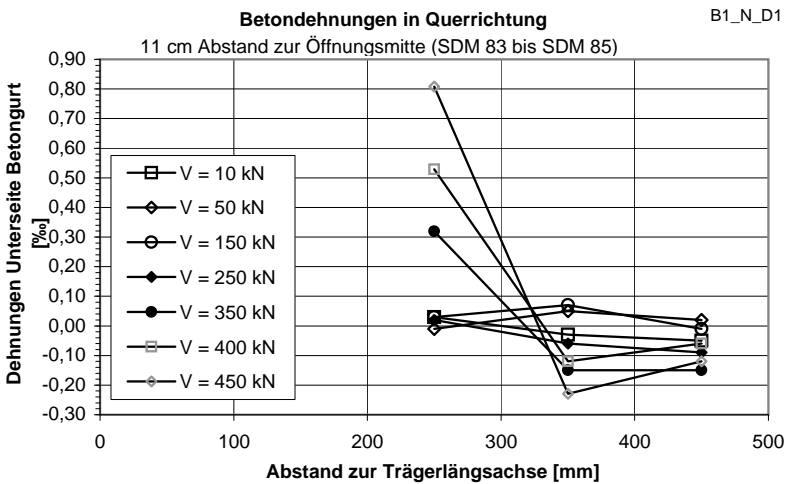
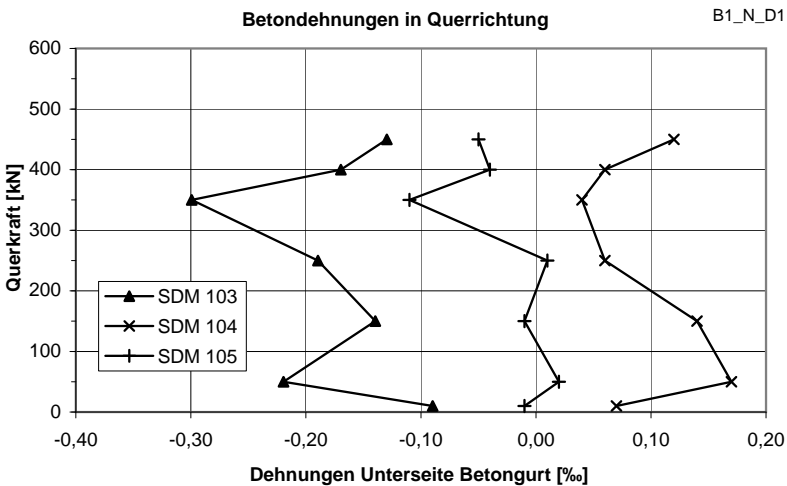
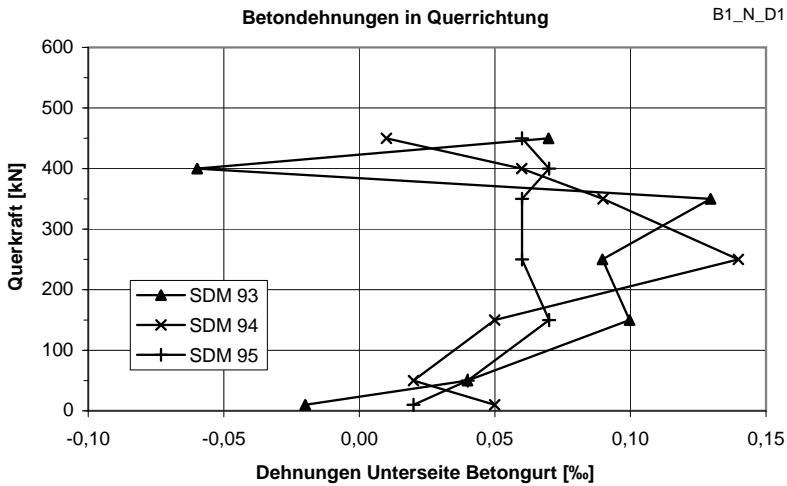


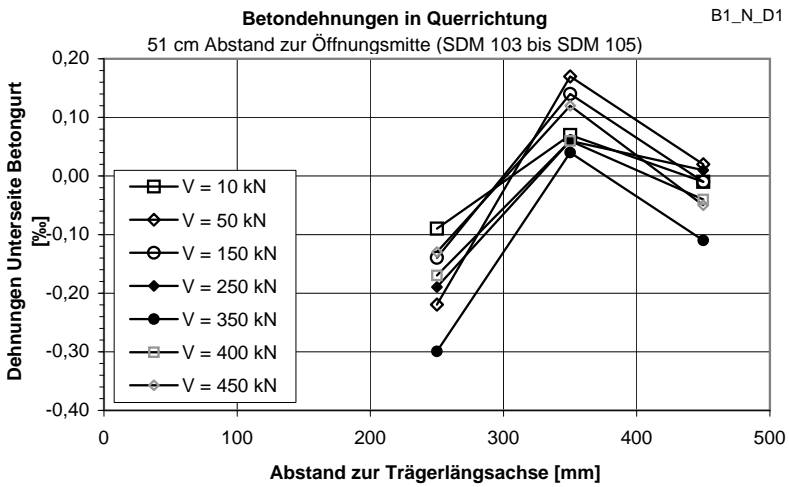
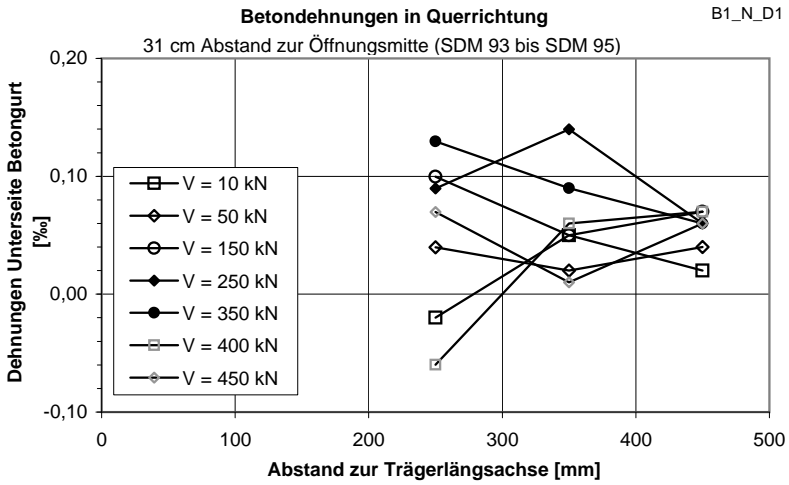






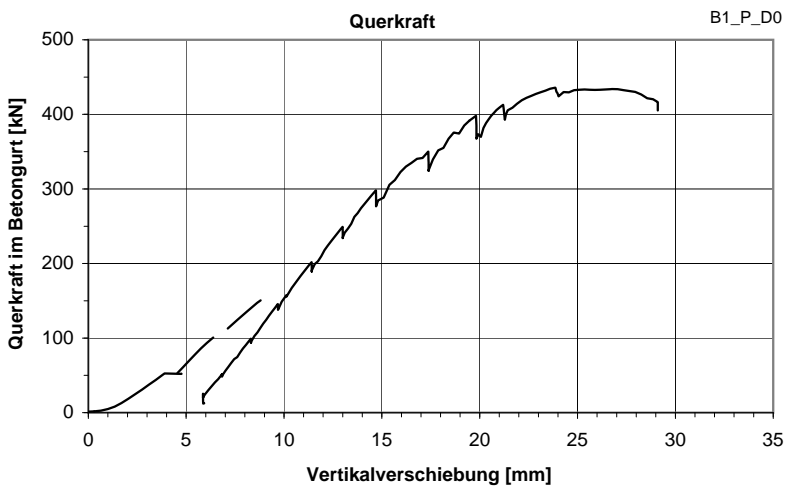
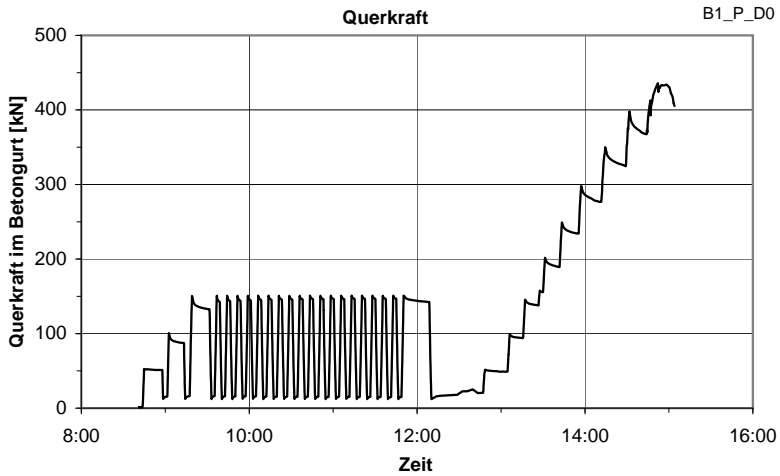


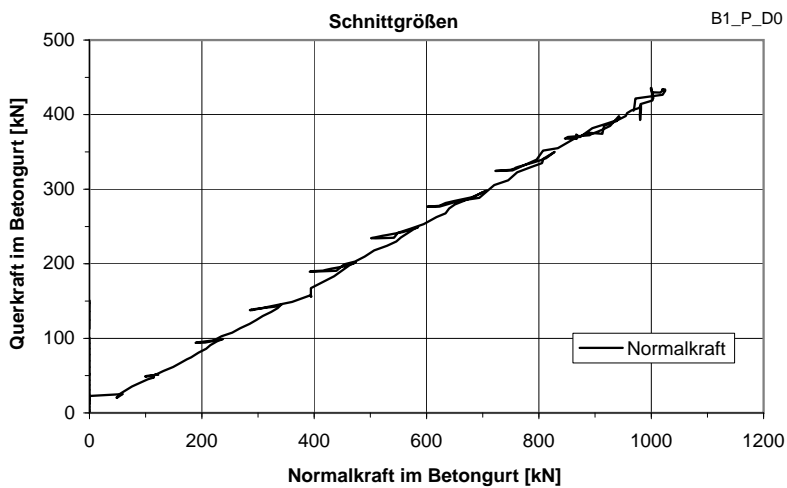
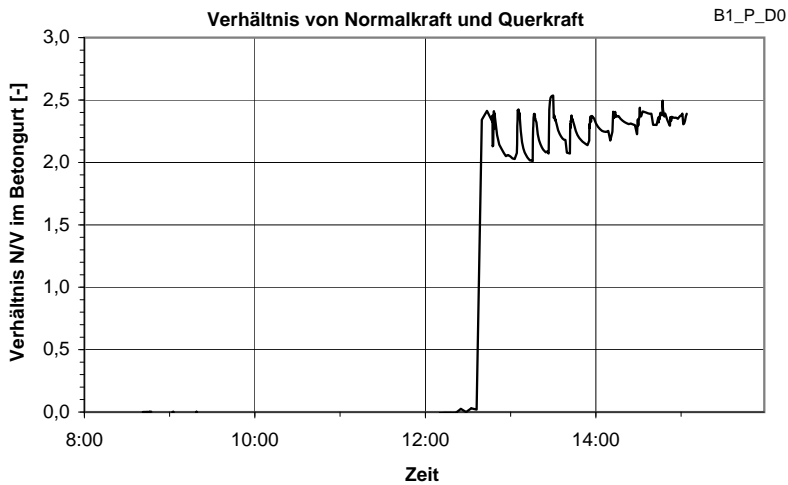
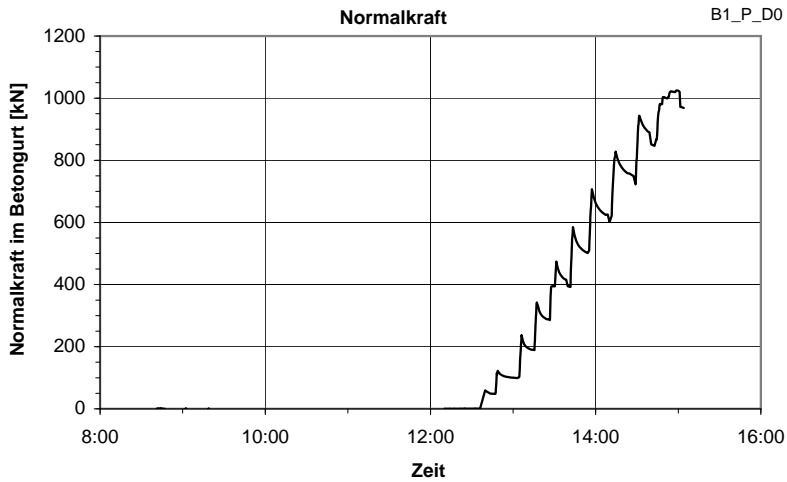


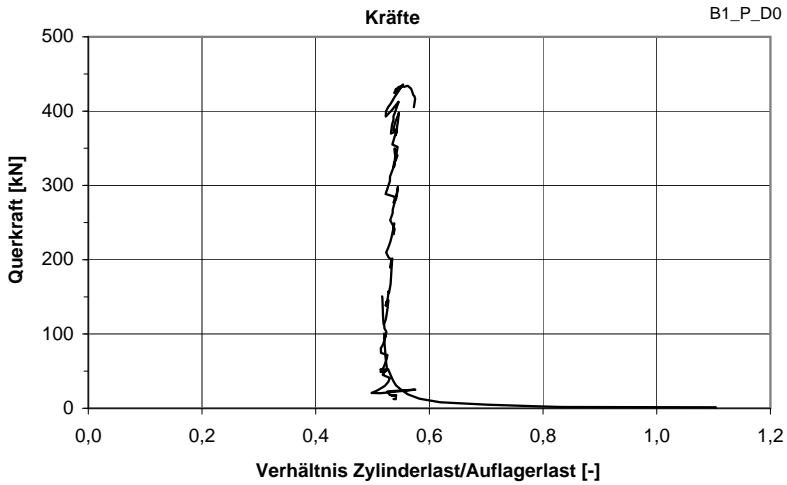
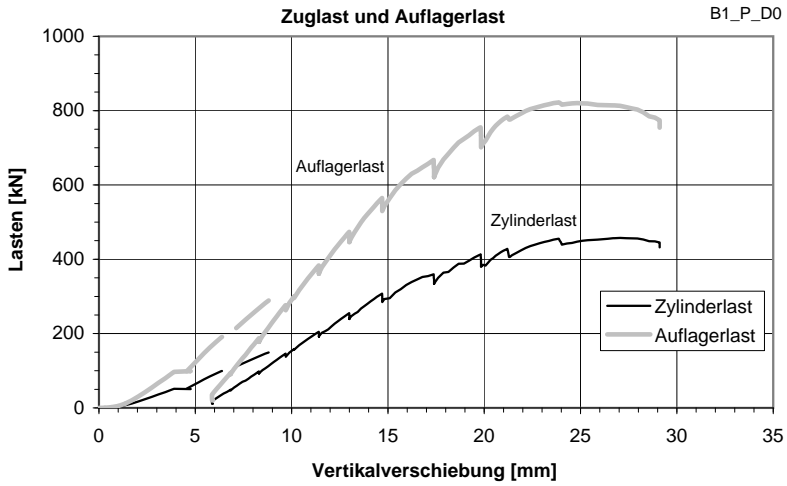


B.4. Versuch B1_P_D0

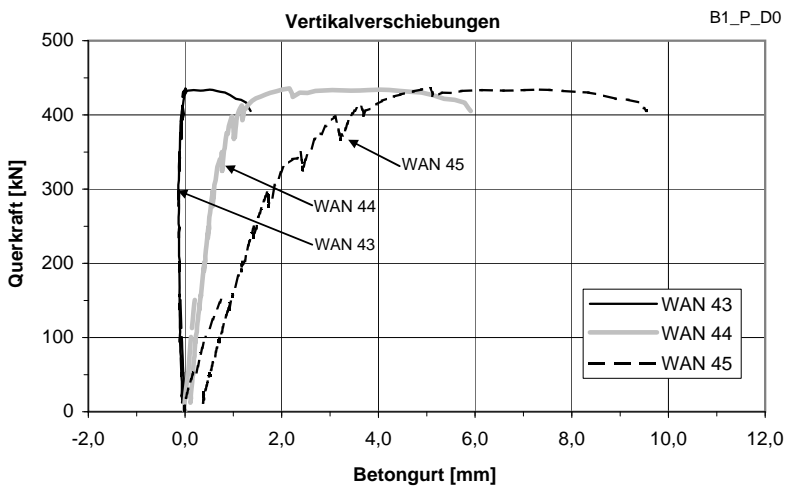
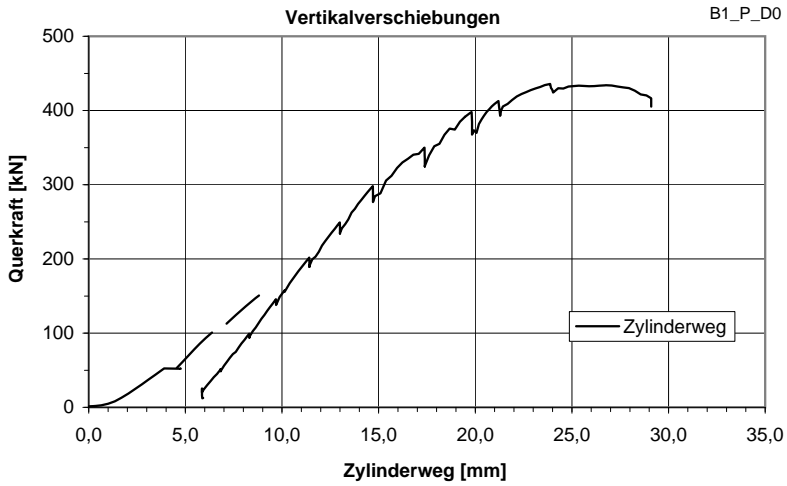
B.4.1. Kräfte

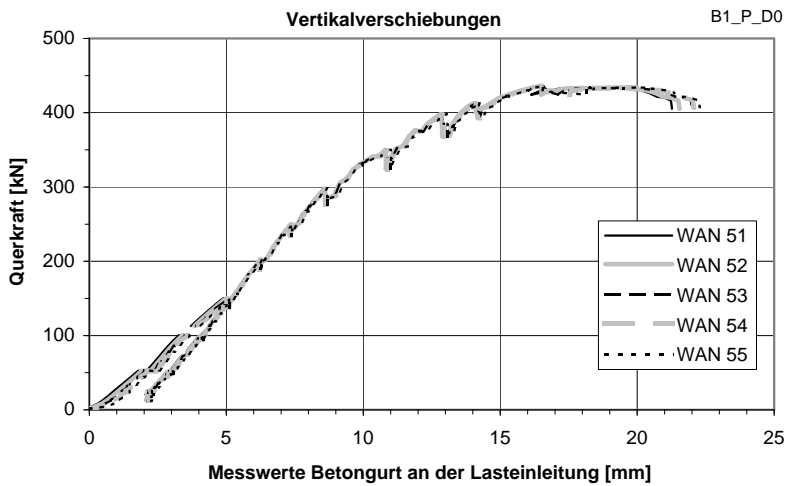
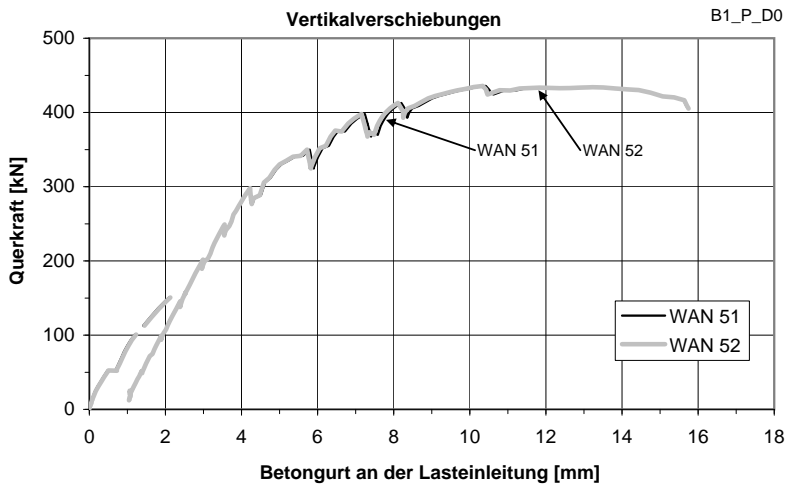
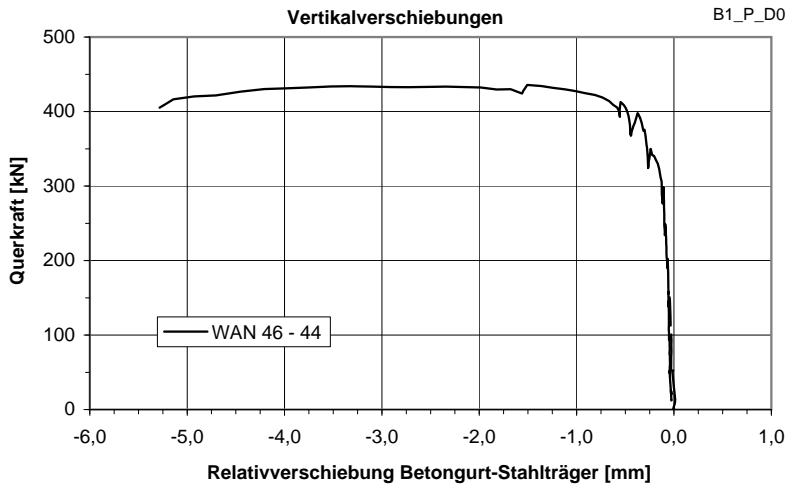




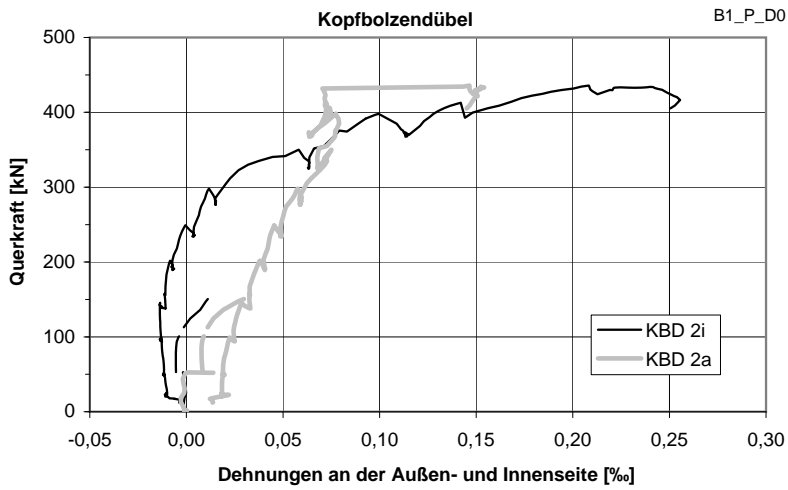
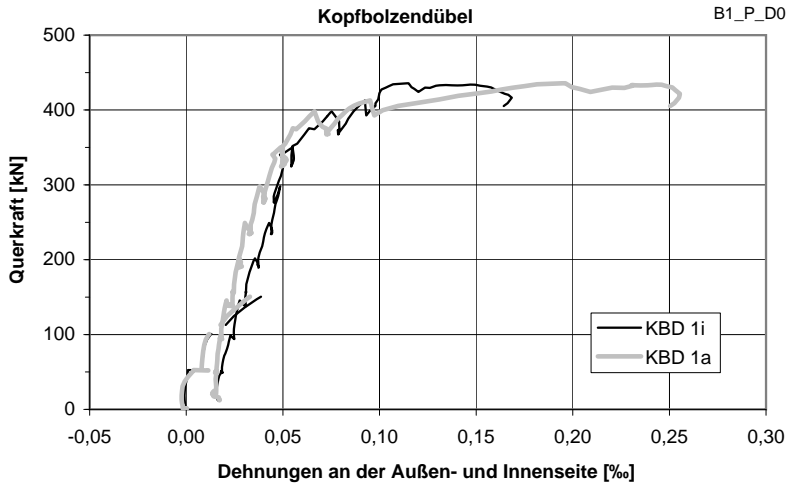


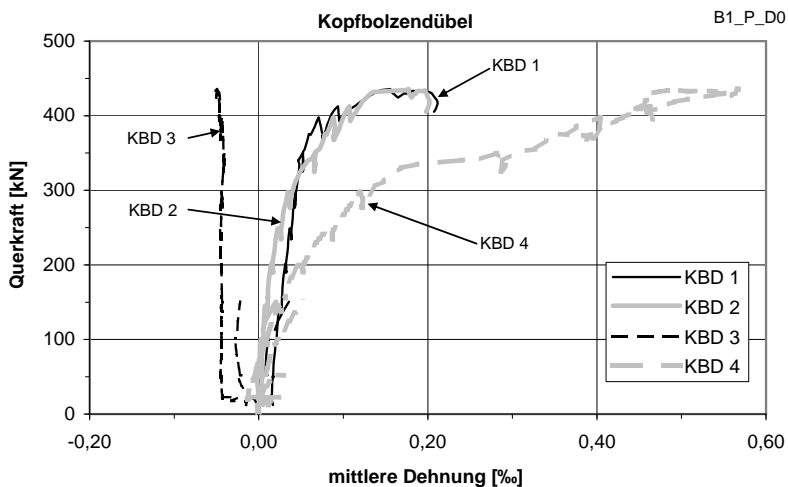
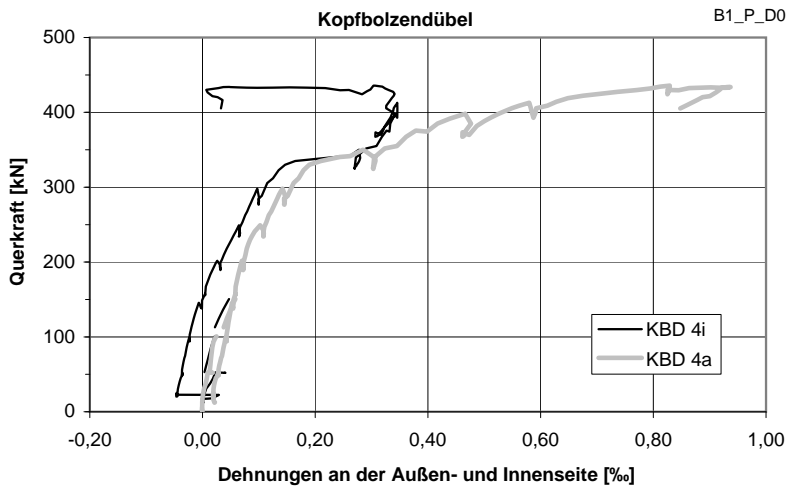
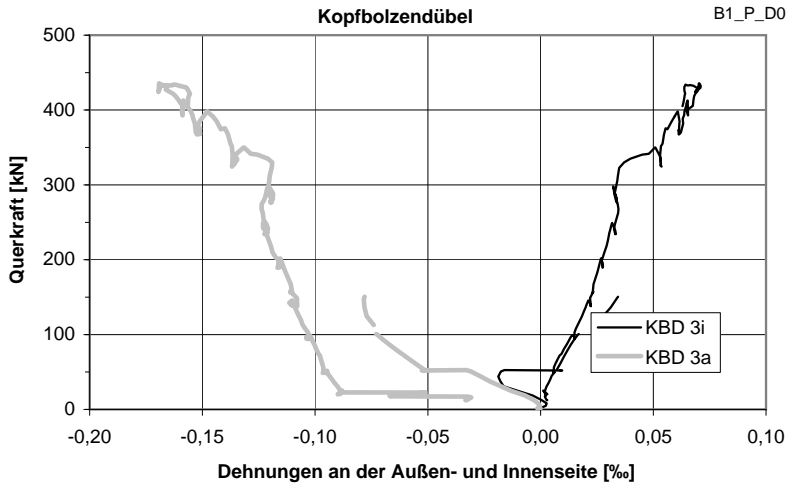
B.4.2. Verformungen

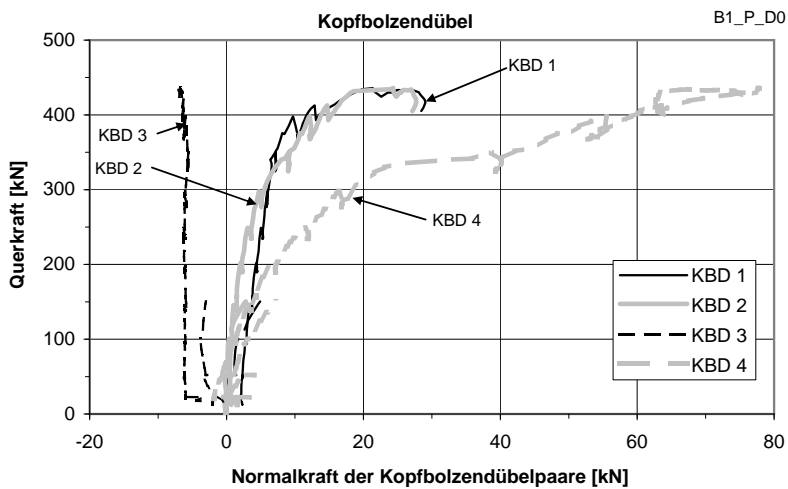
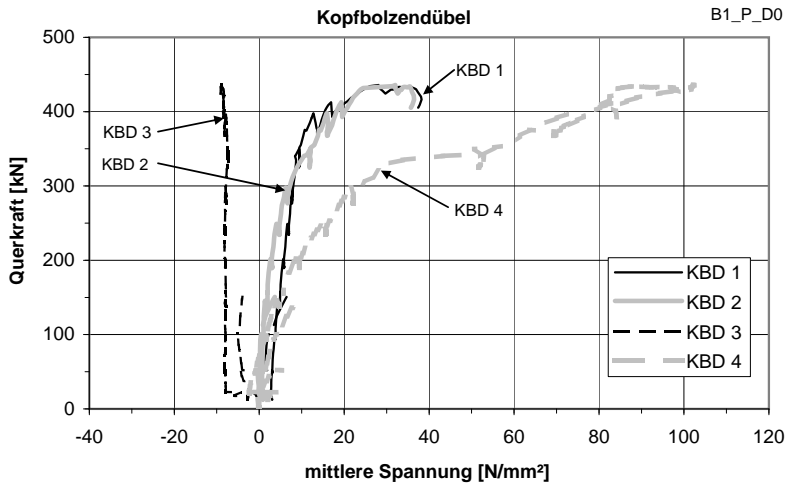




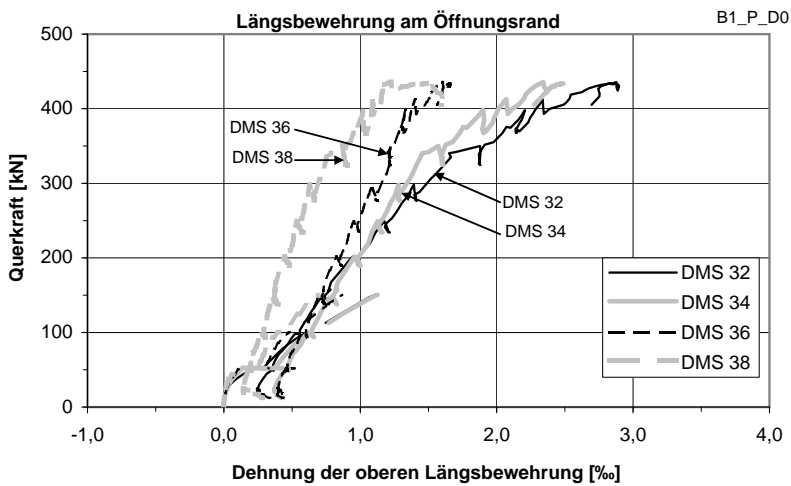
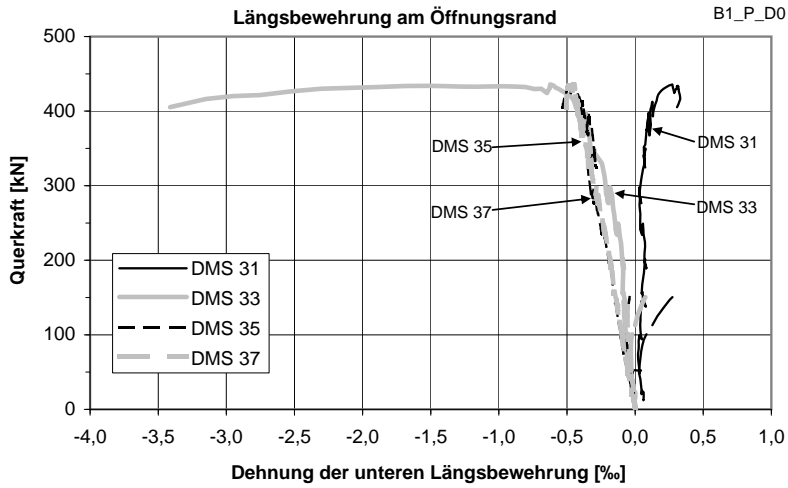
B.4.3. Kopfbolzendübel

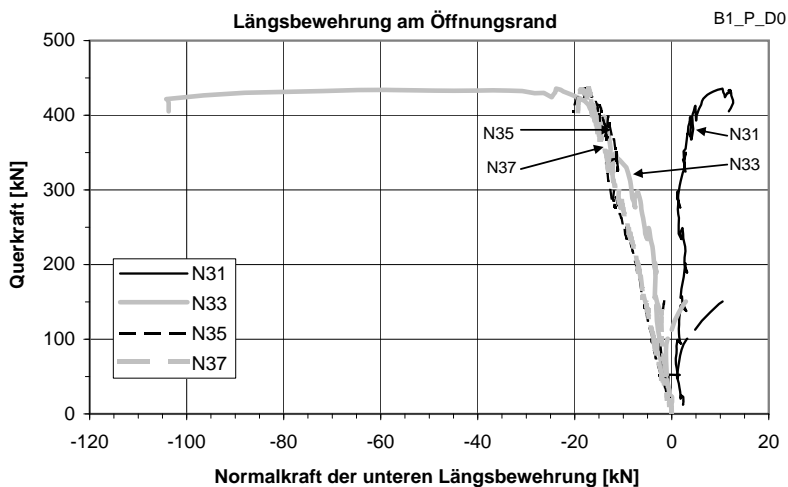
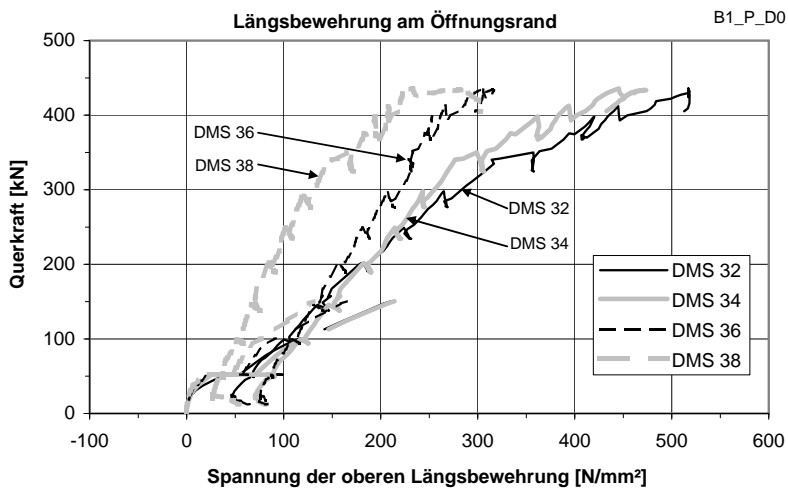
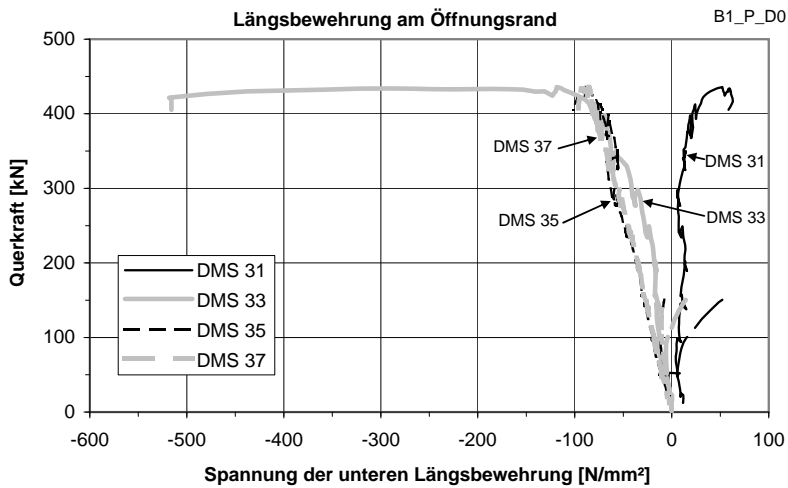


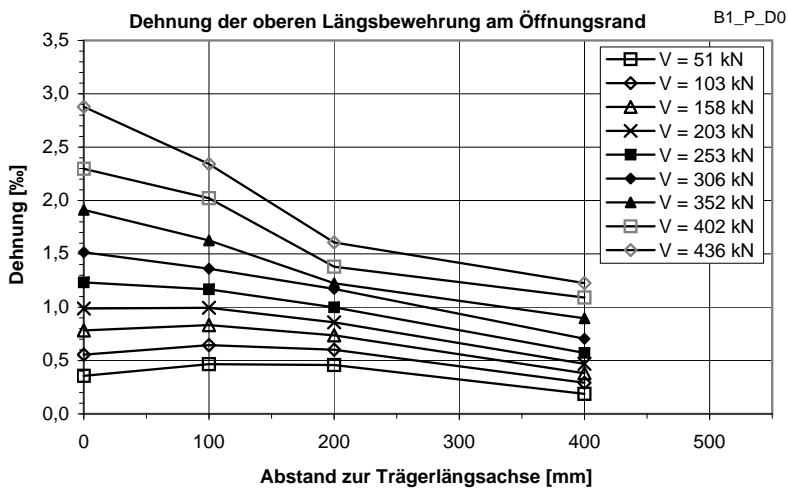
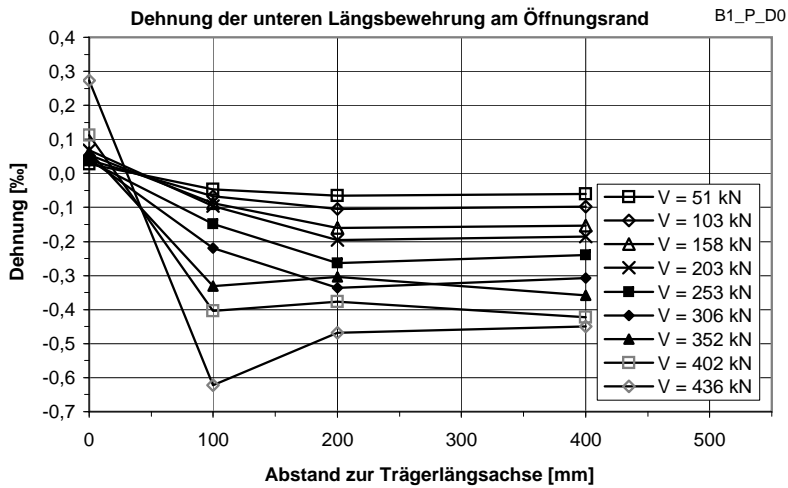
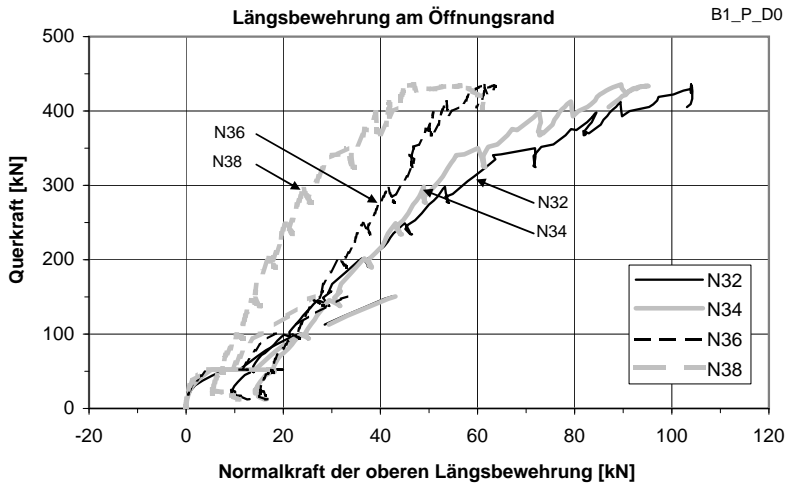


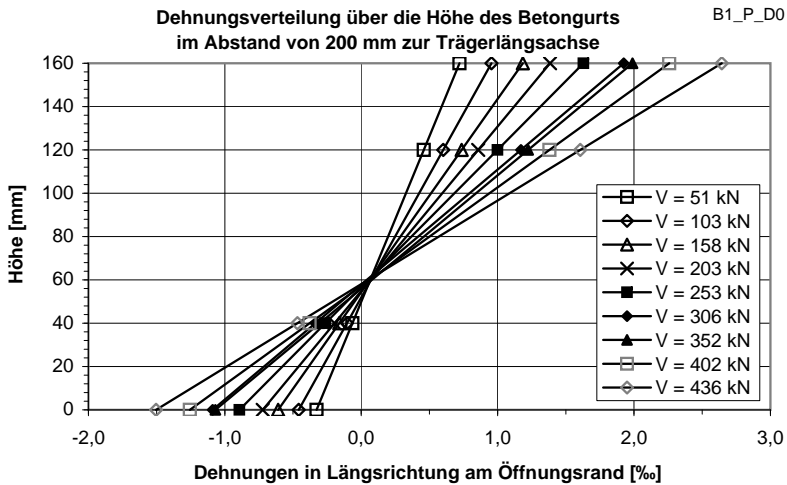
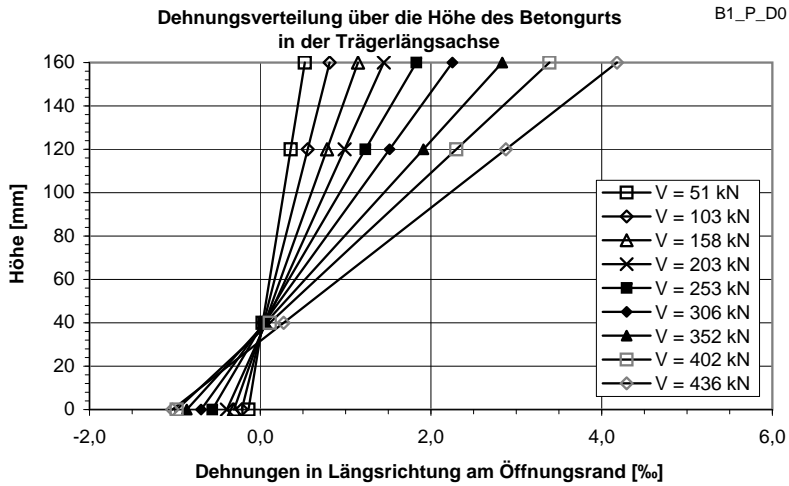


B.4.4. Längsbewehrung

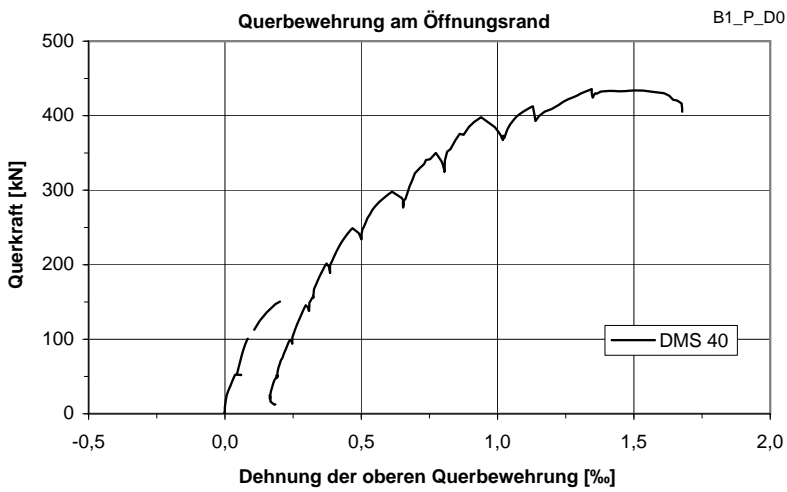
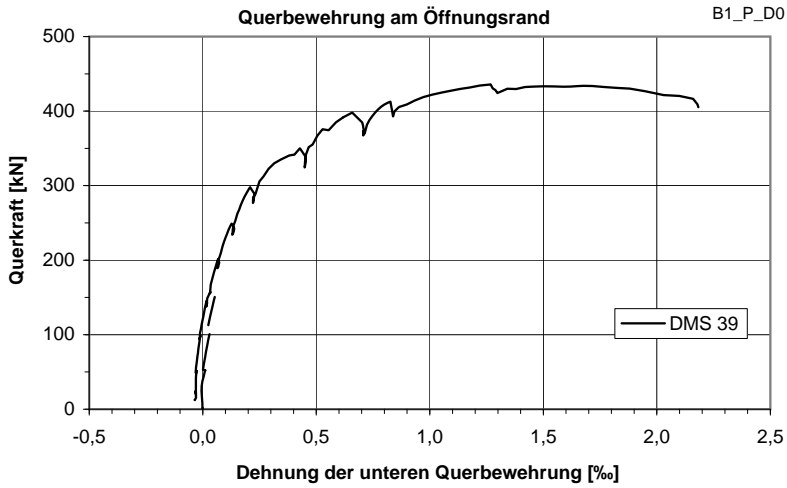


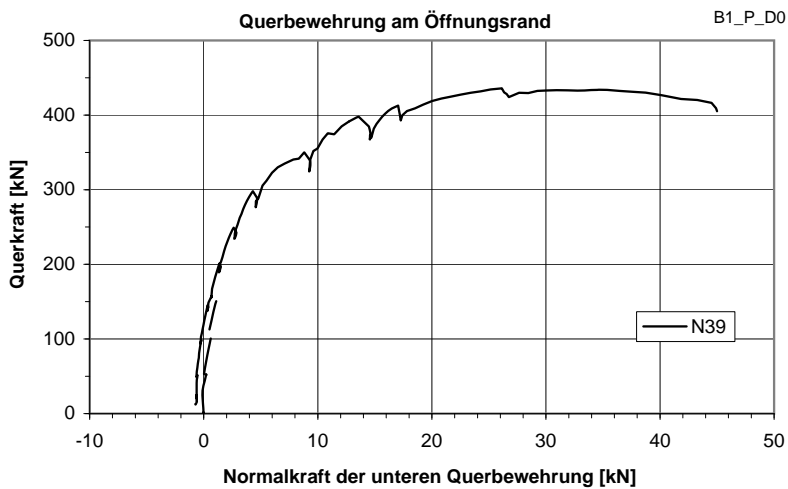
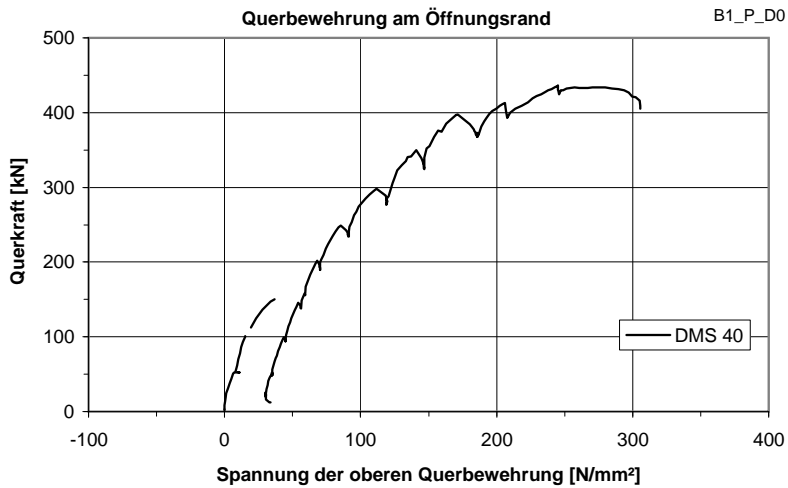
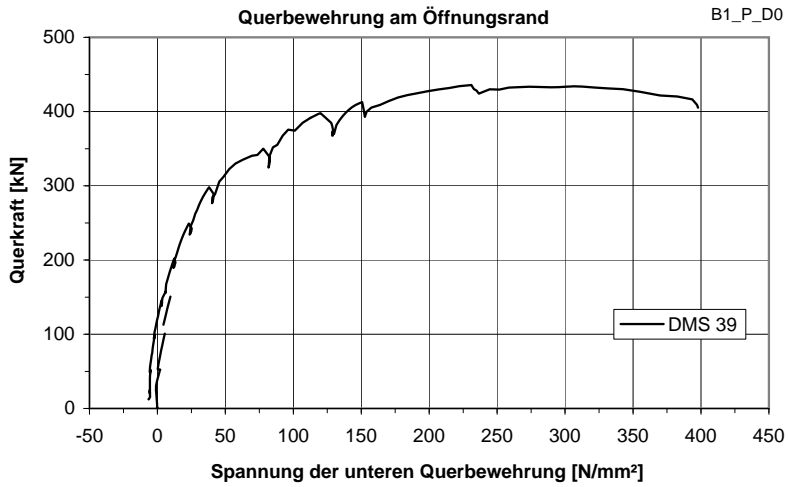


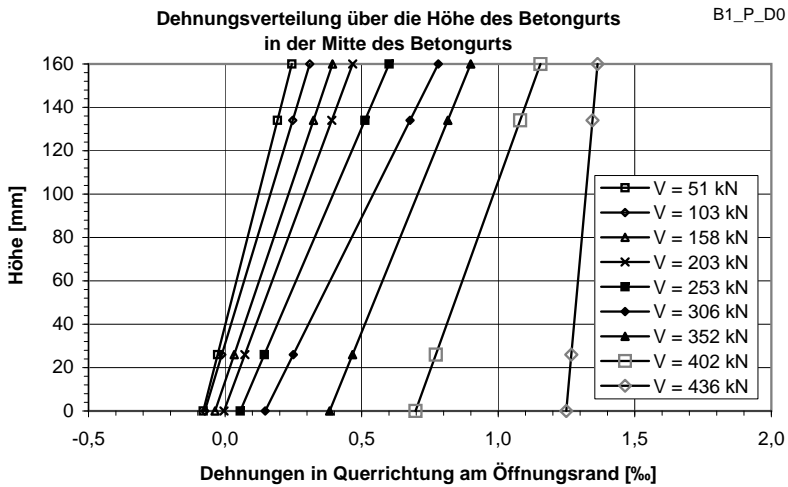
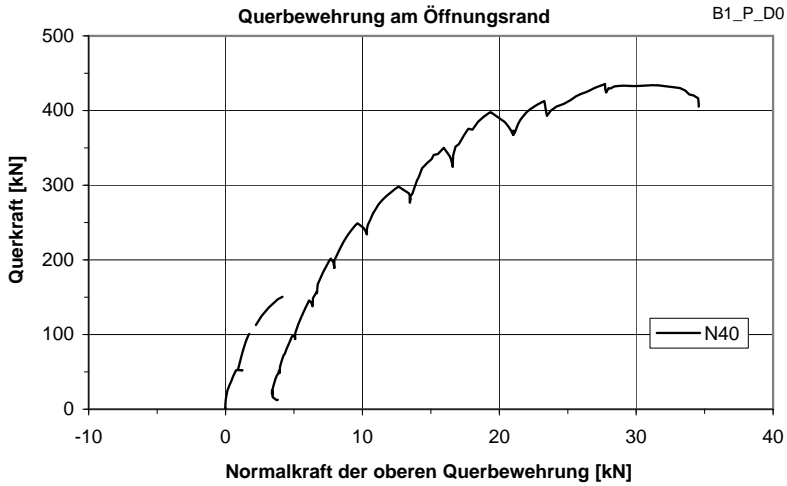




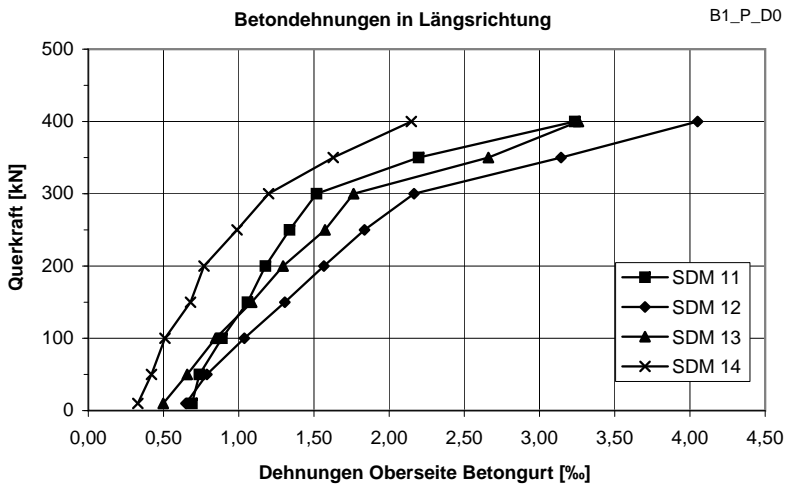
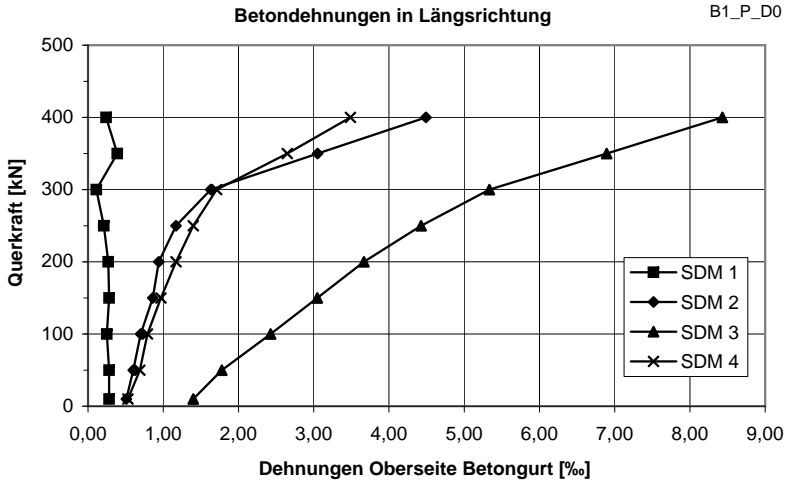
B.4.5. Querbewehrung

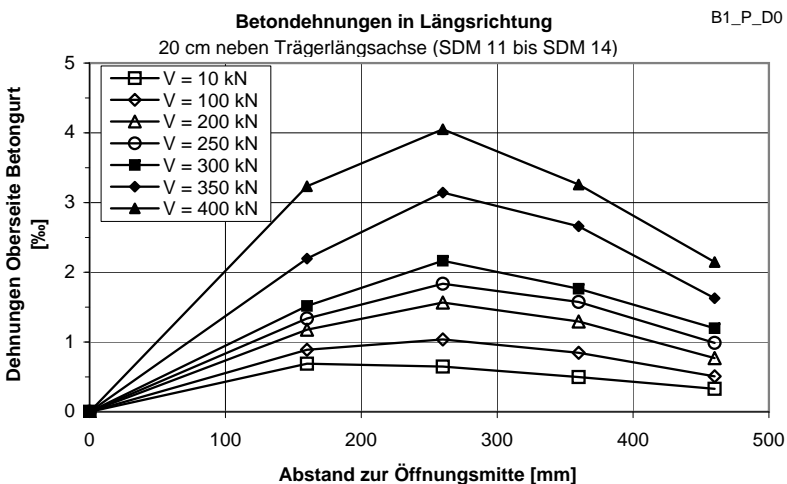
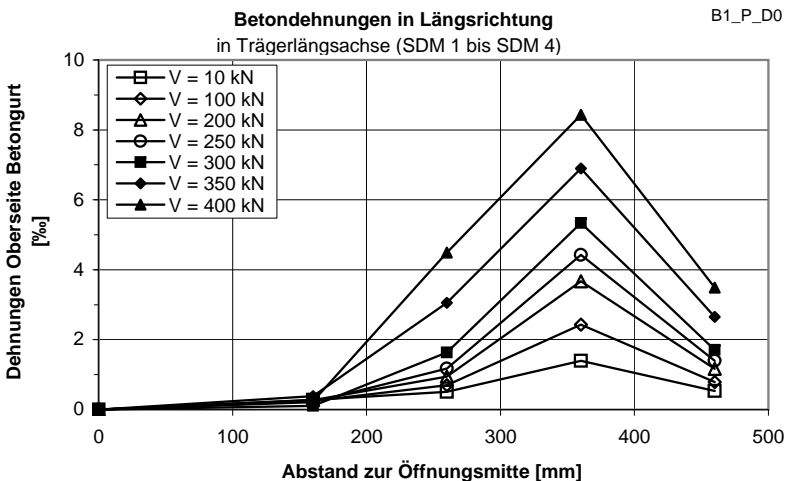
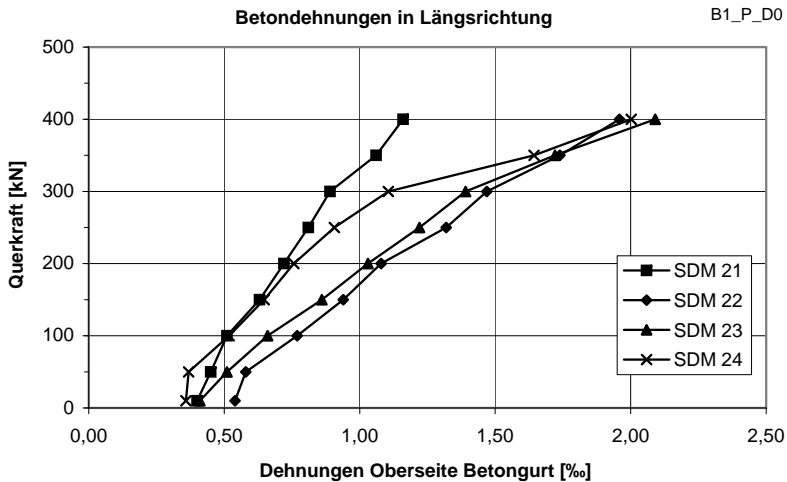


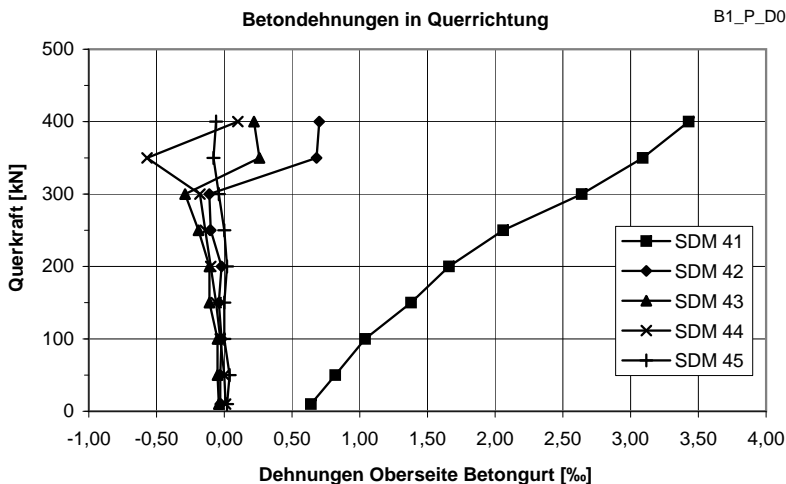
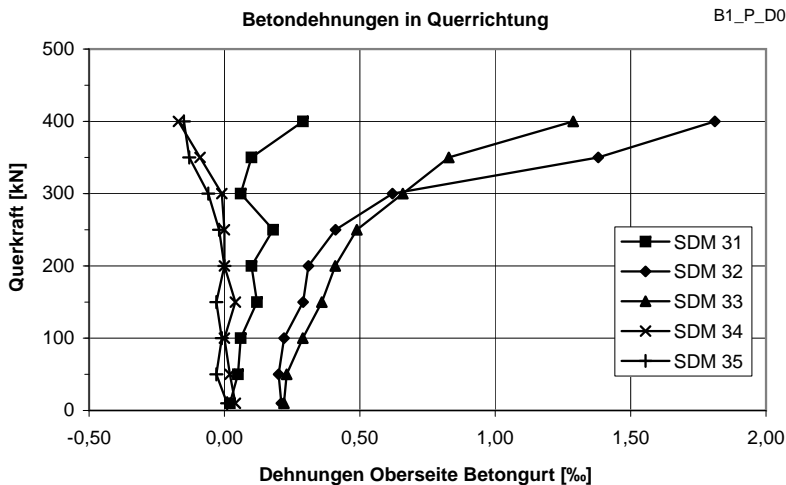
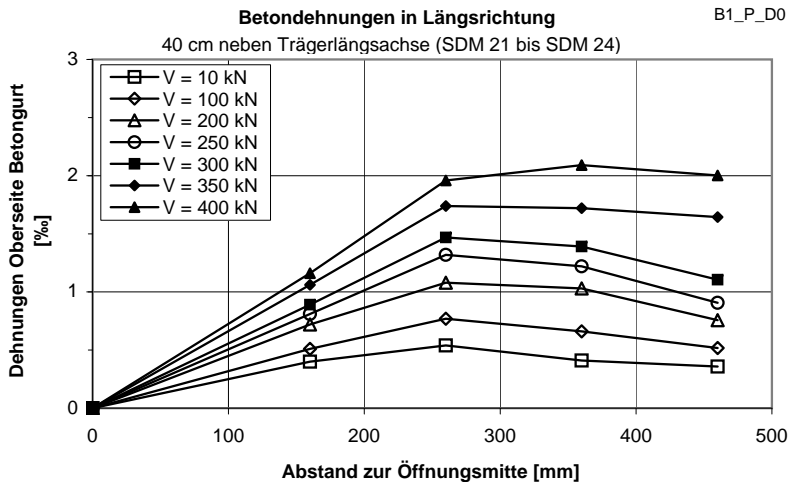


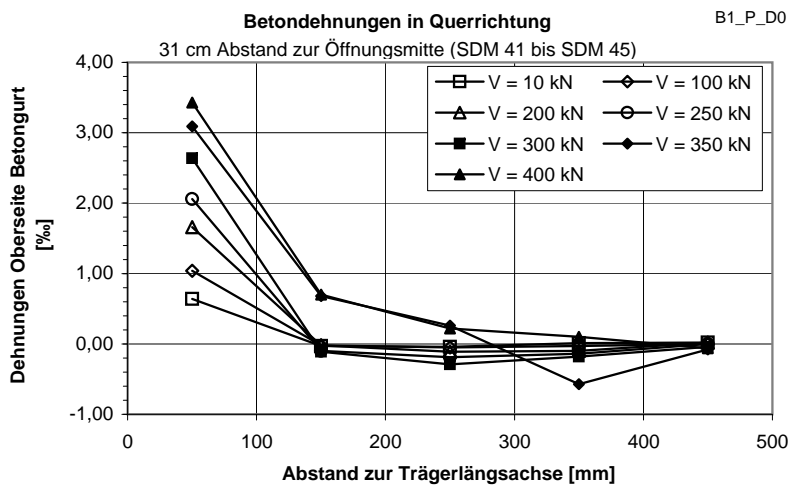
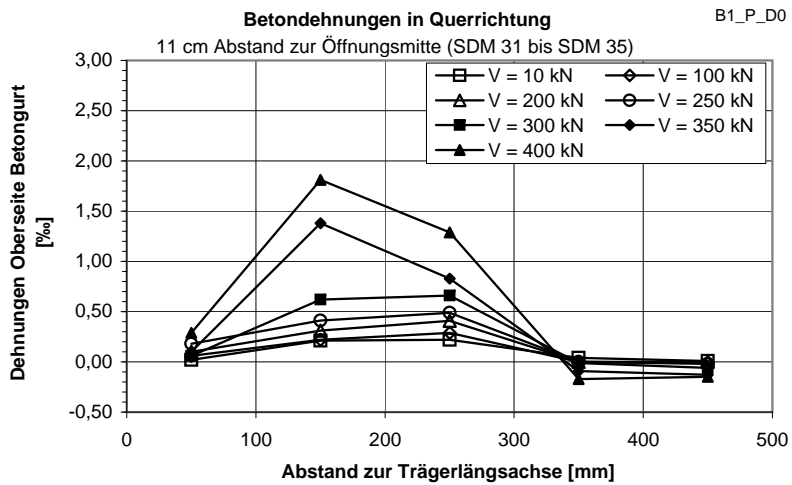
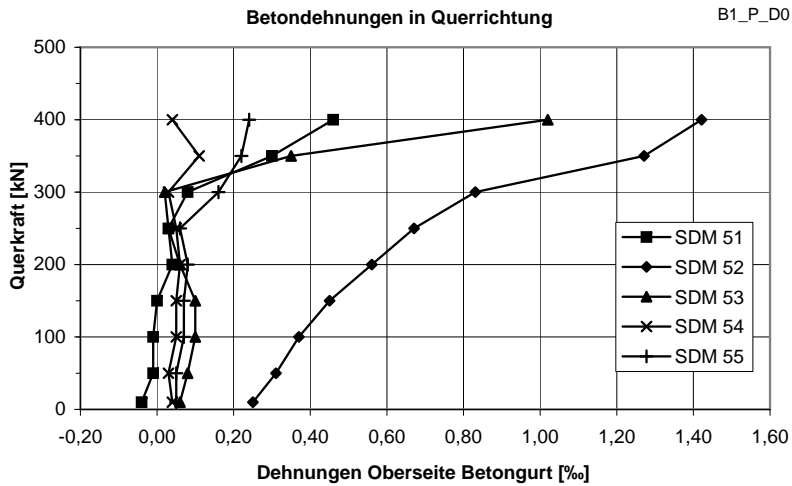


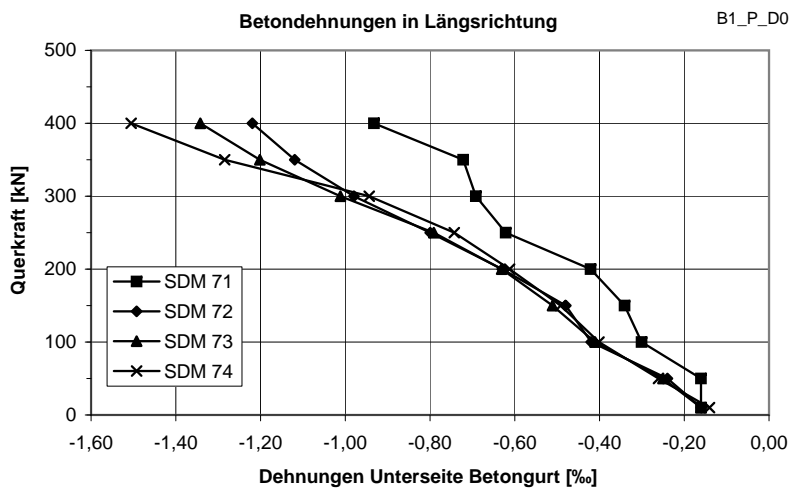
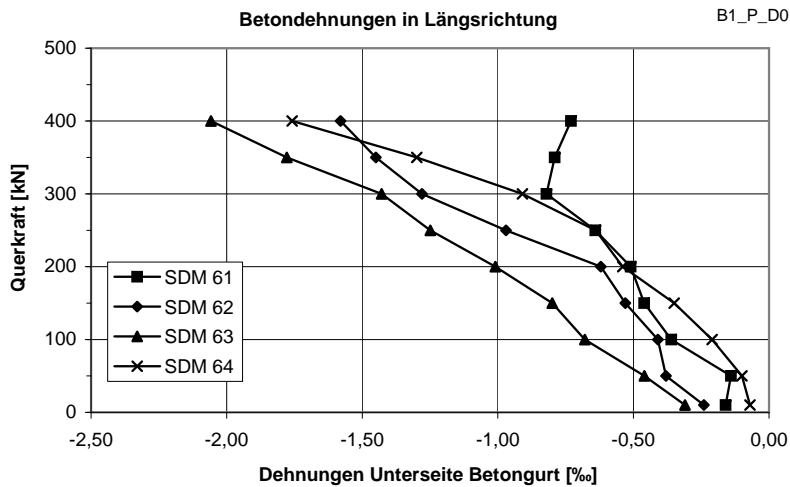
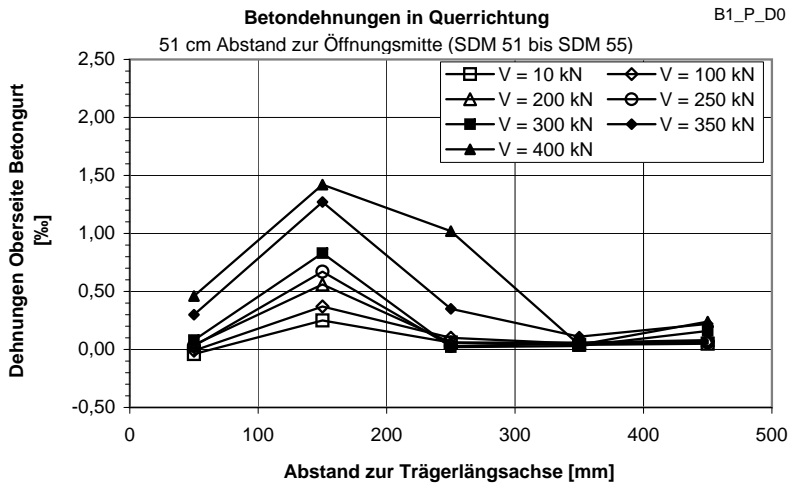
B.4.6. Betondehnungen

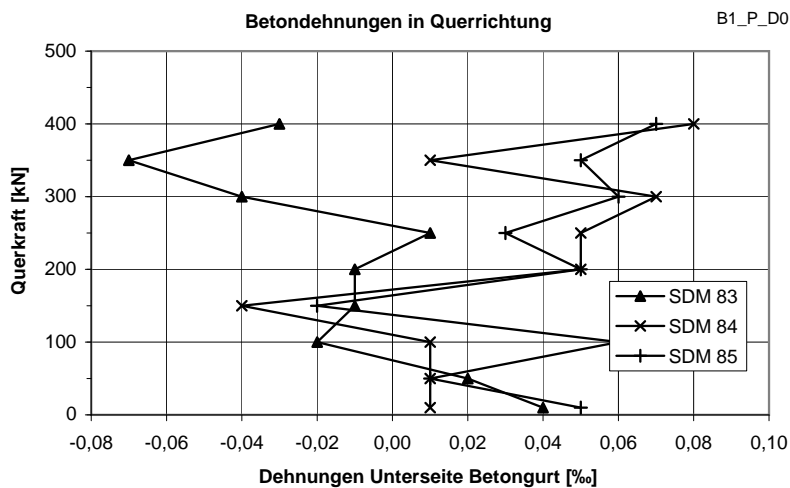
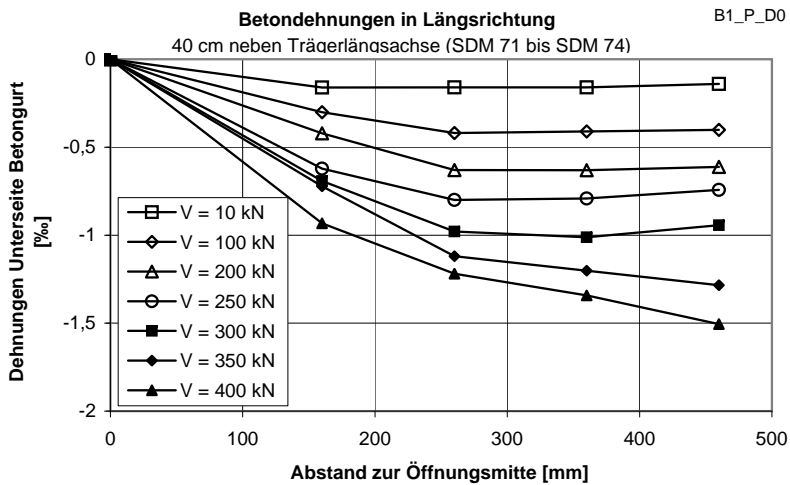
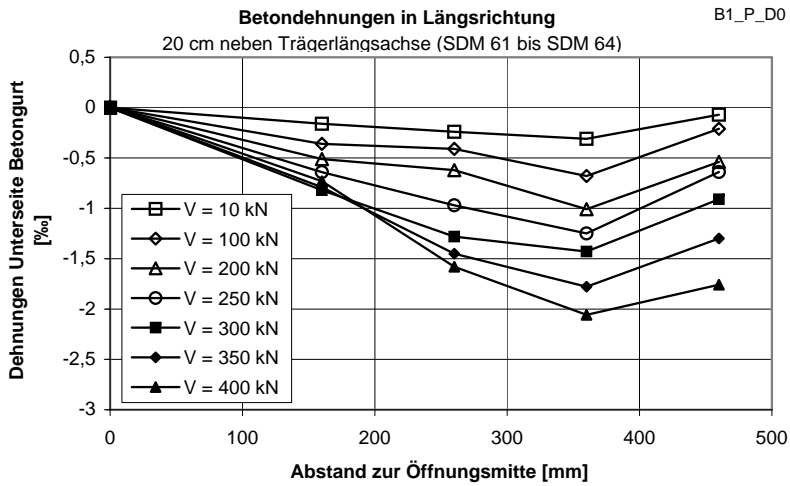


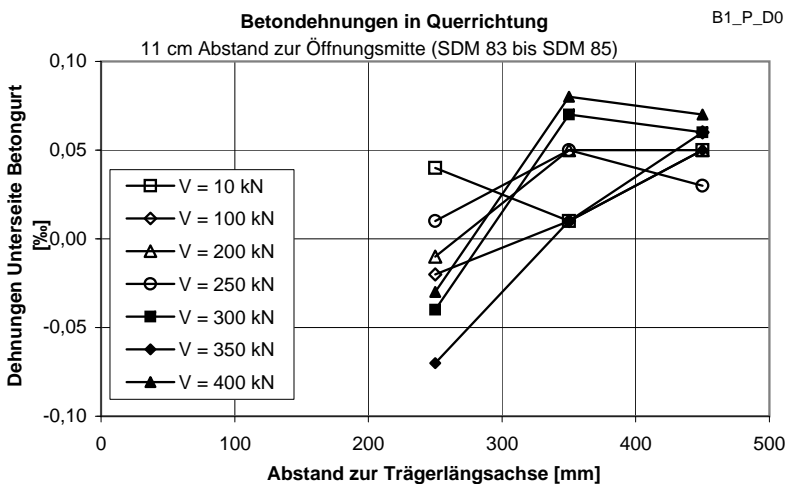
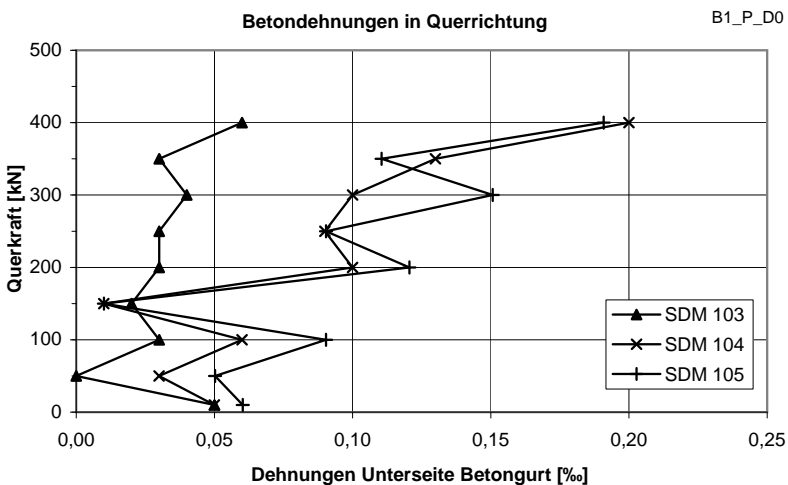
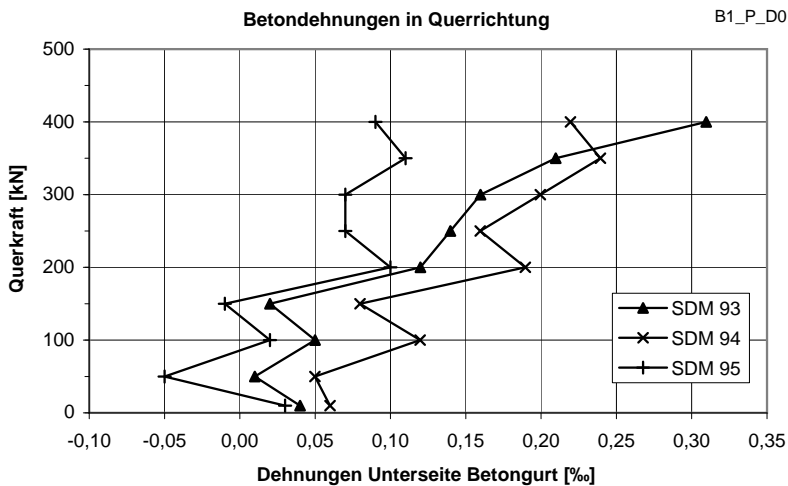


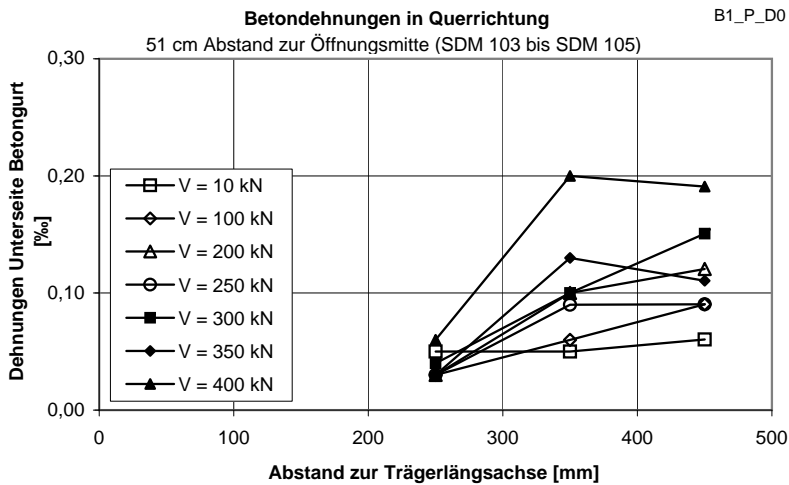
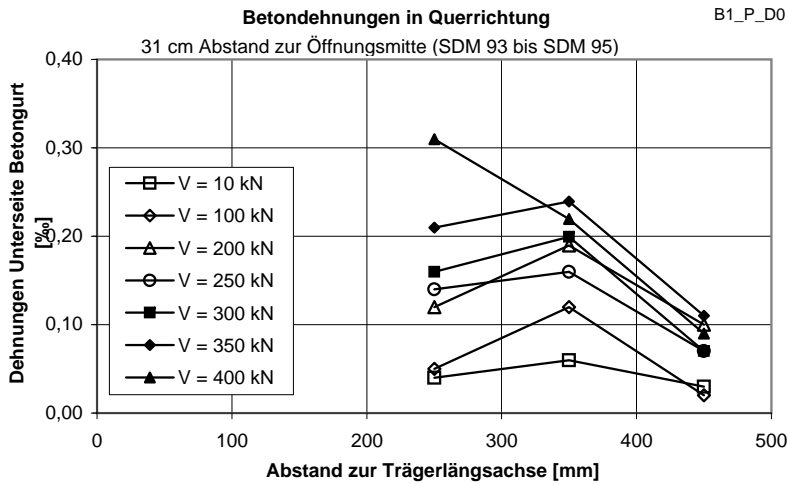






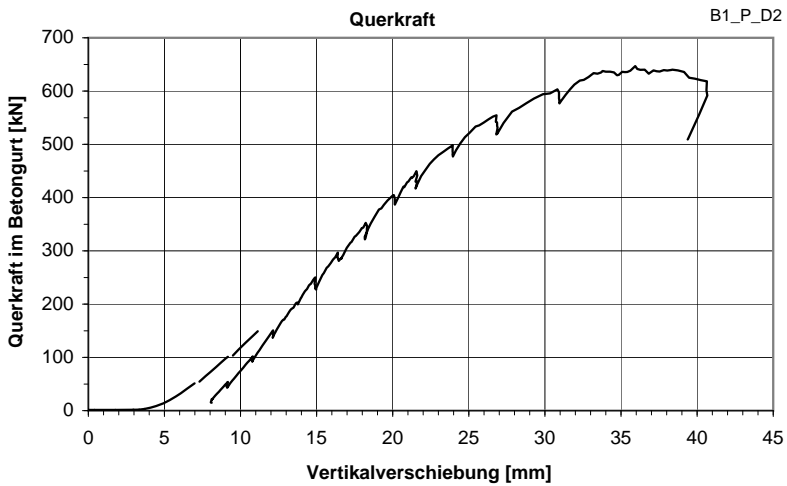
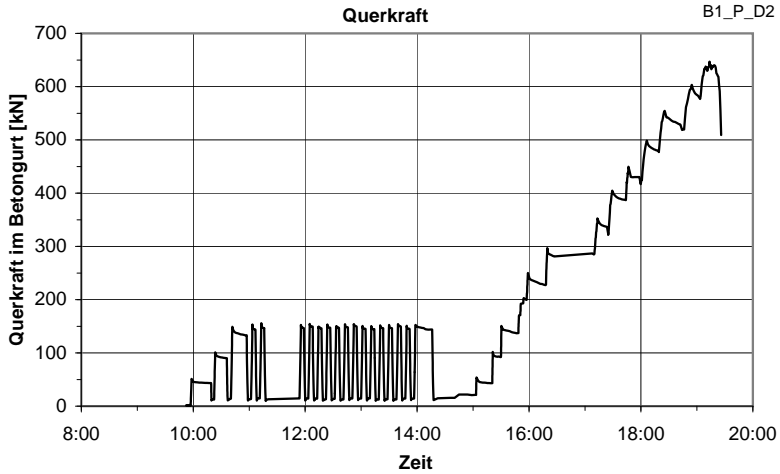


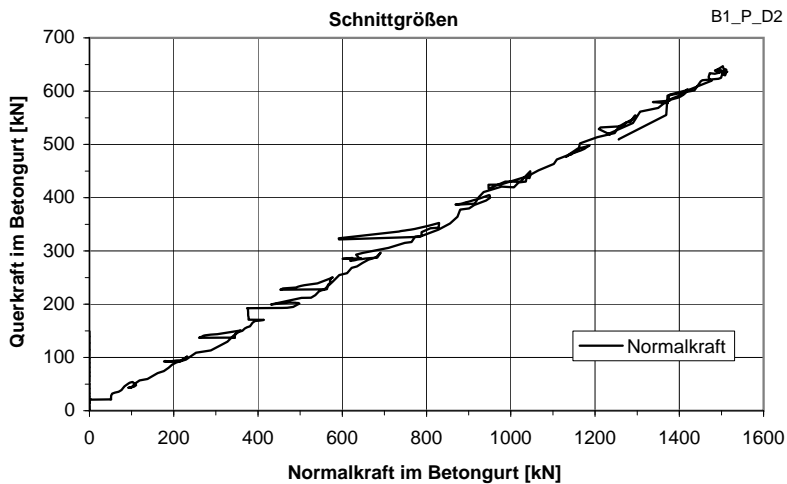
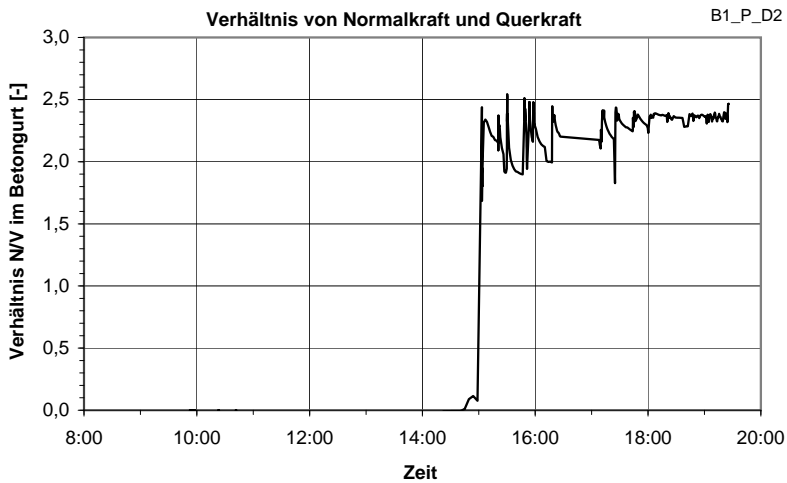
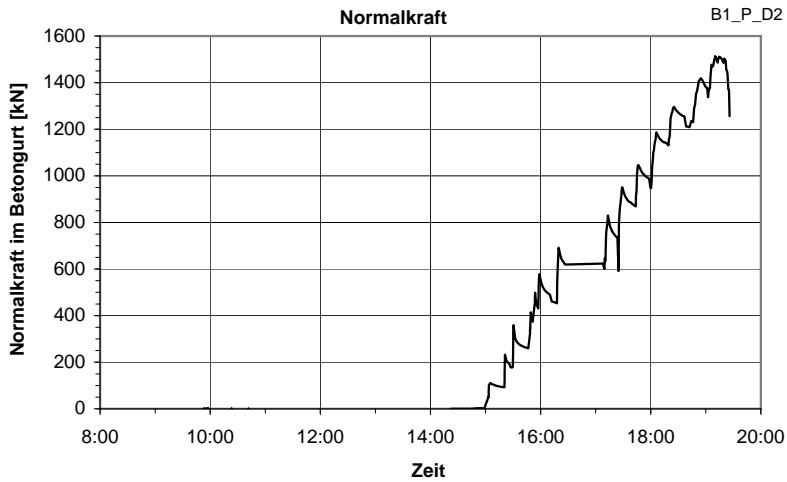


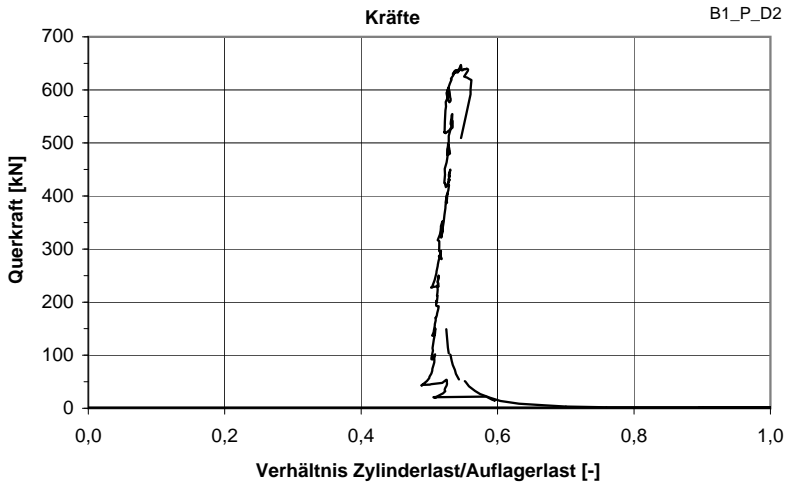
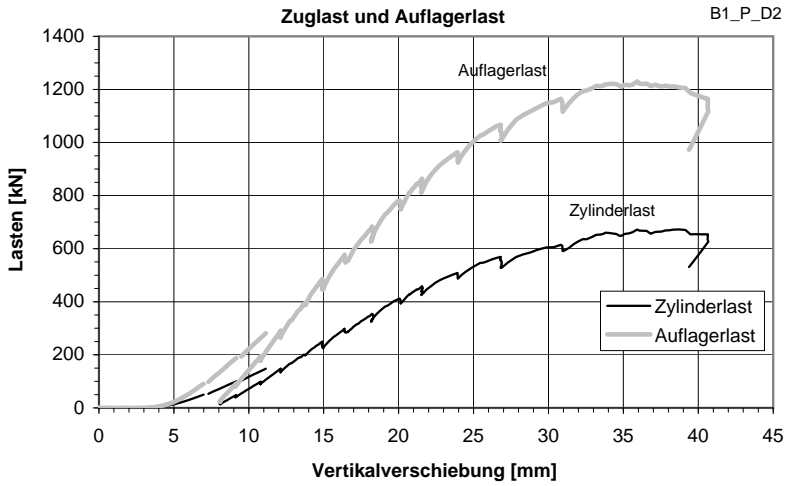


B.5. Versuch B1_P_D2

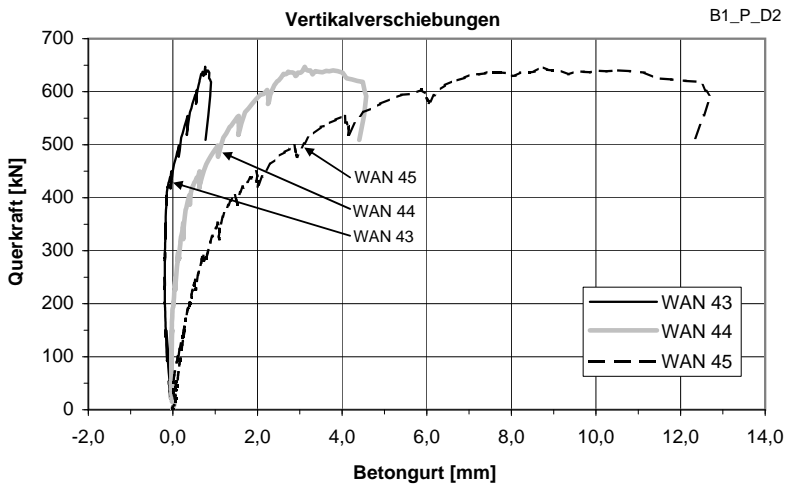
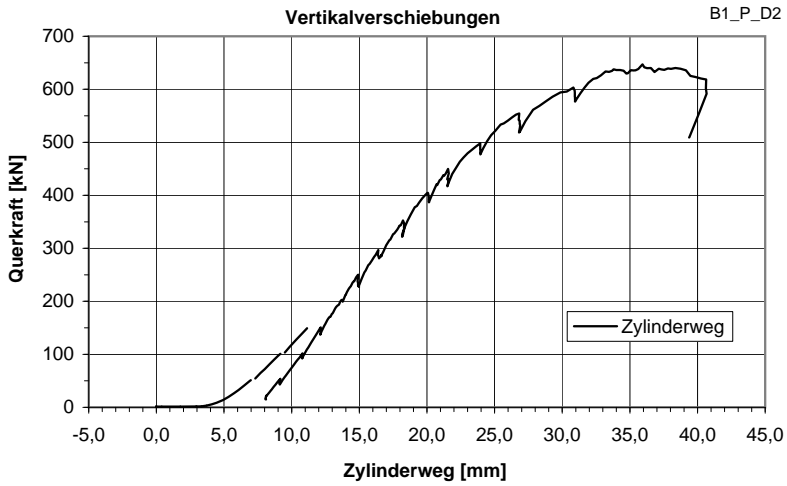
B.5.1. Kräfte

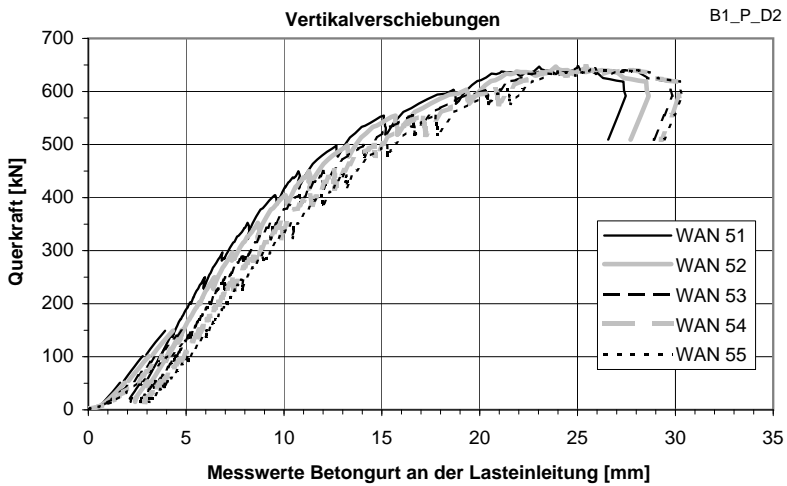
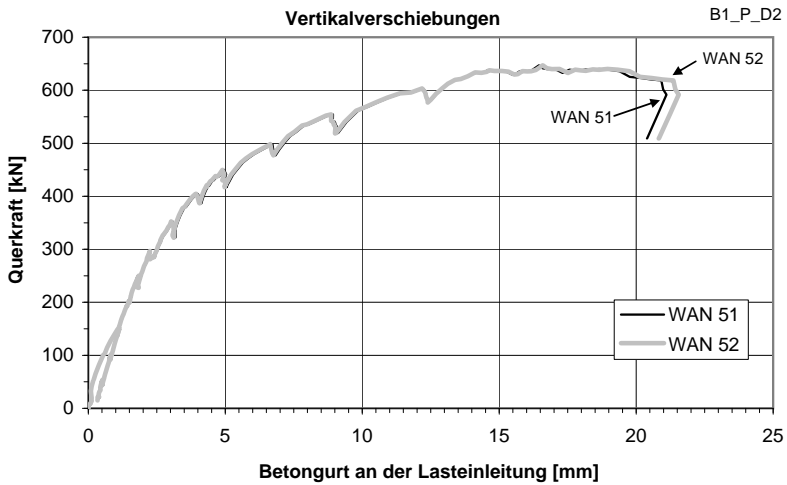
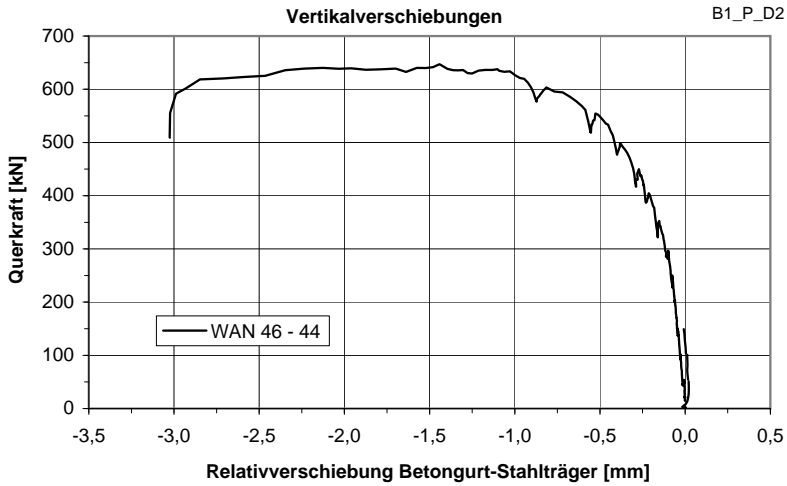




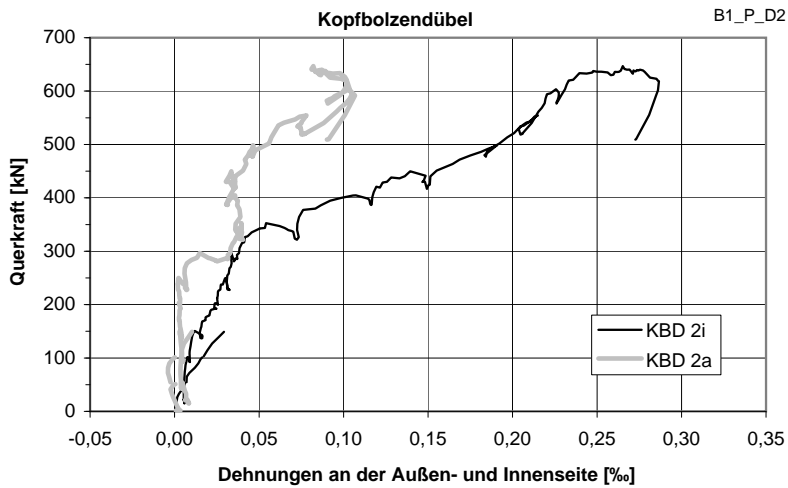
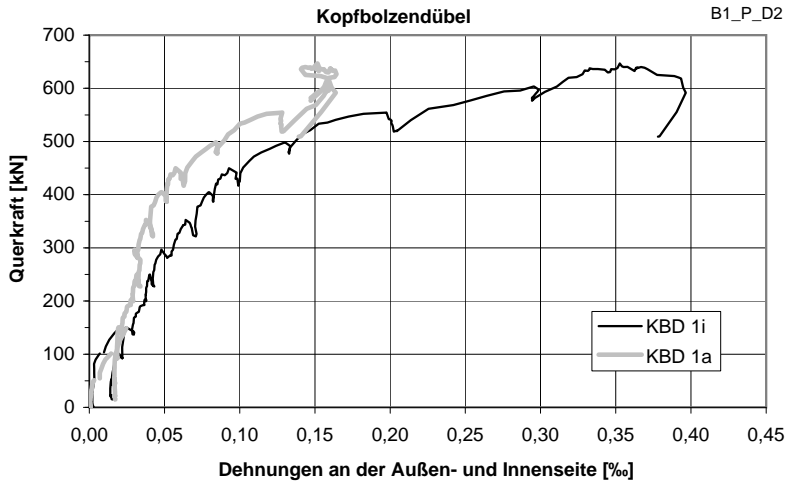


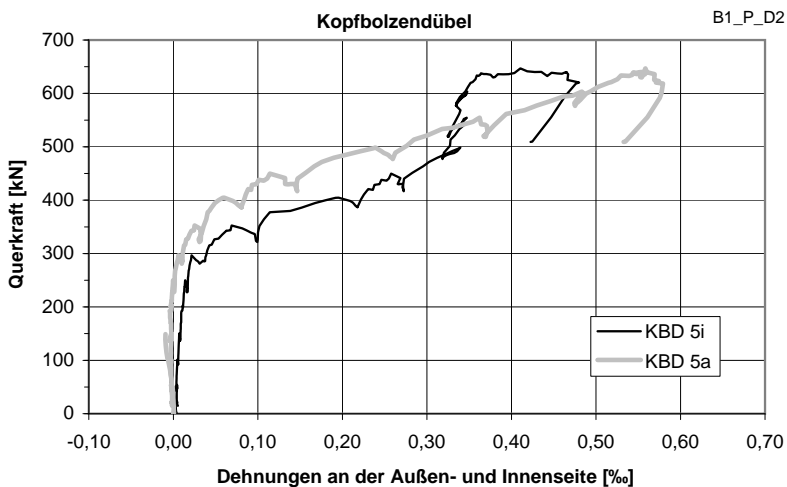
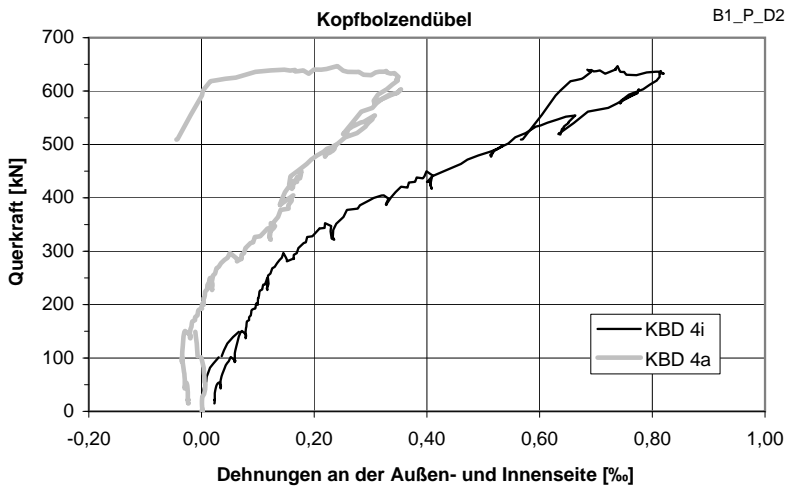
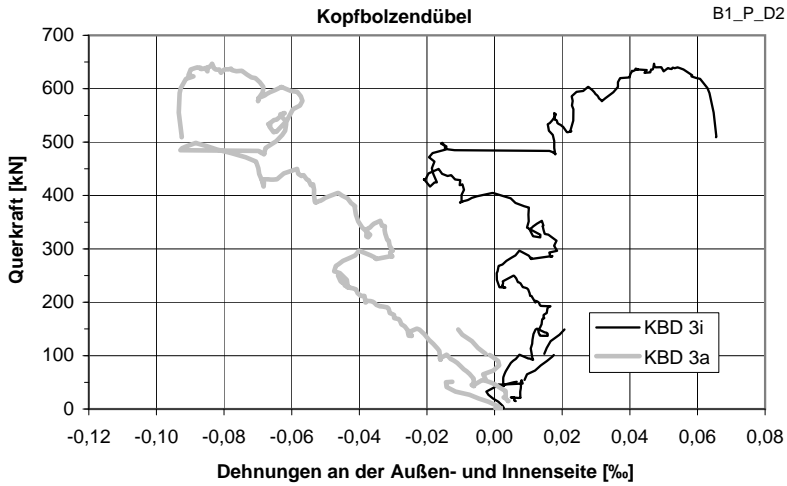
B.5.2. Verformungen

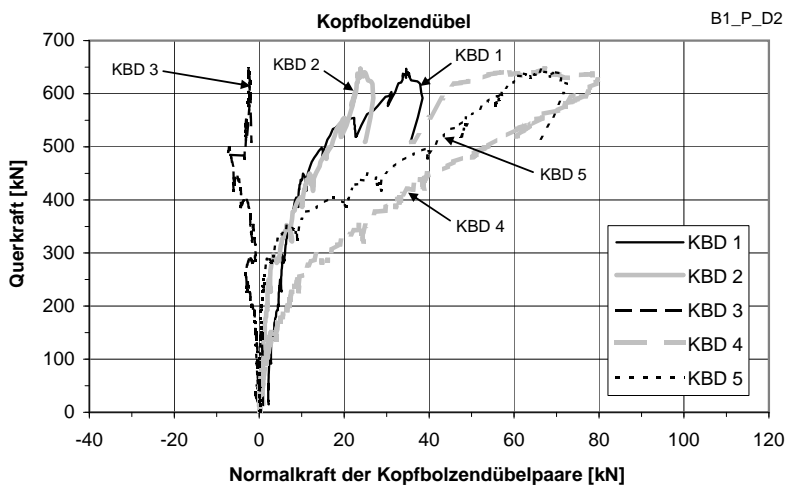
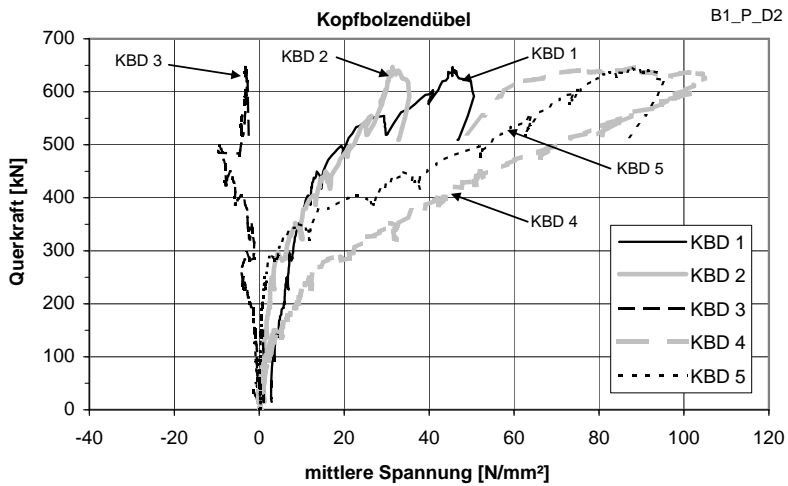
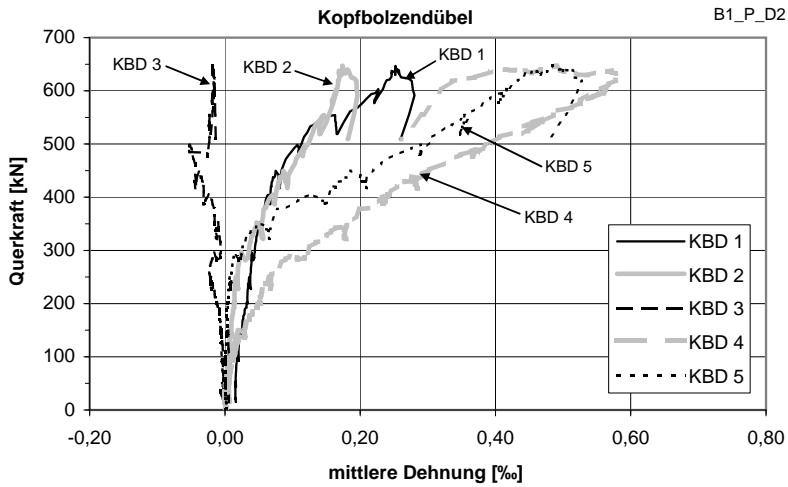




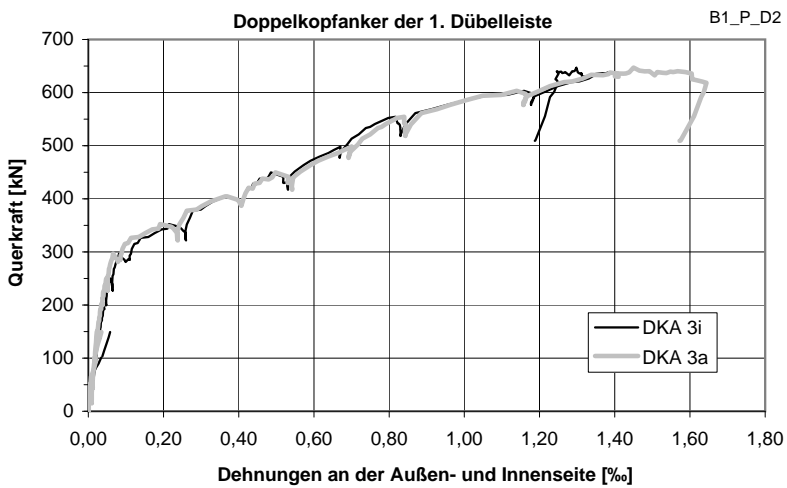
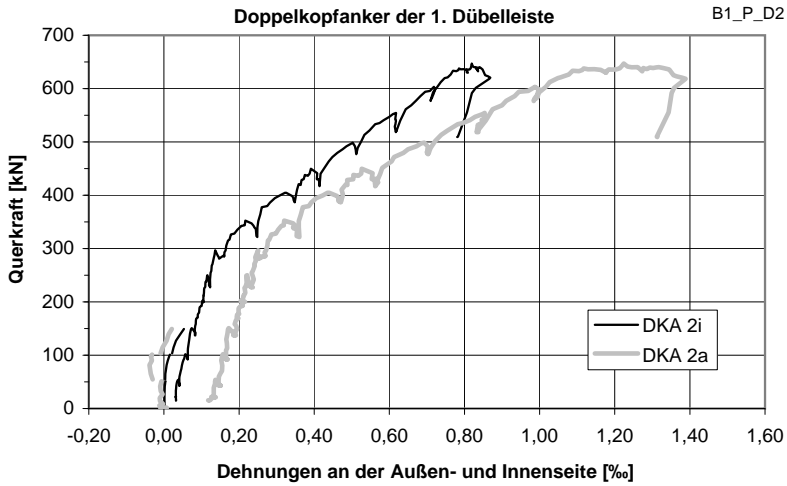
B.5.3. Kopfbolzendübel

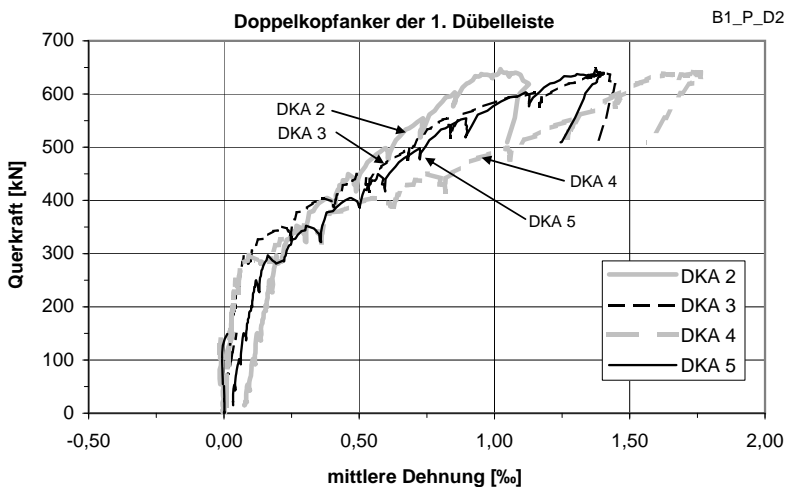
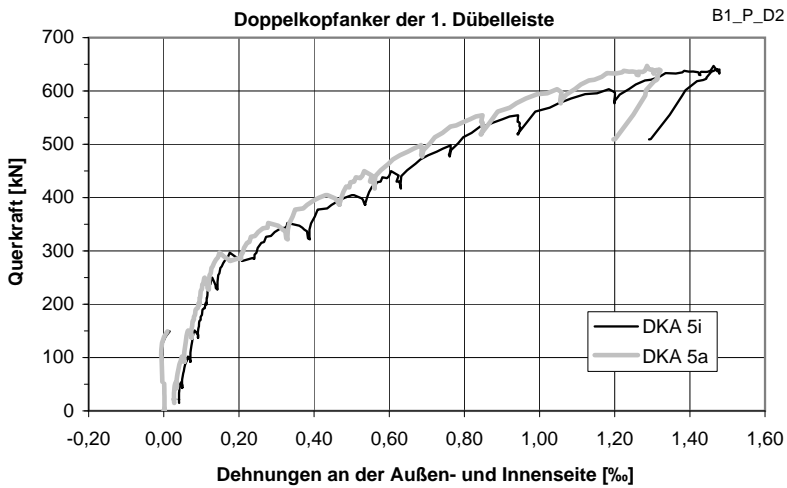
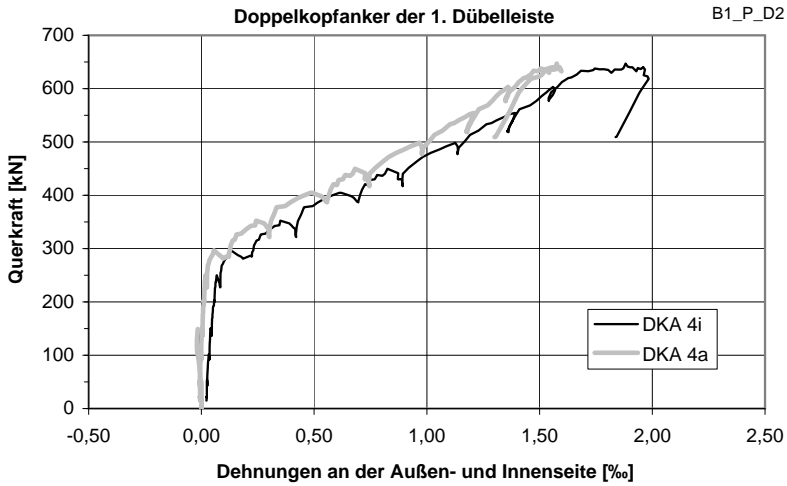


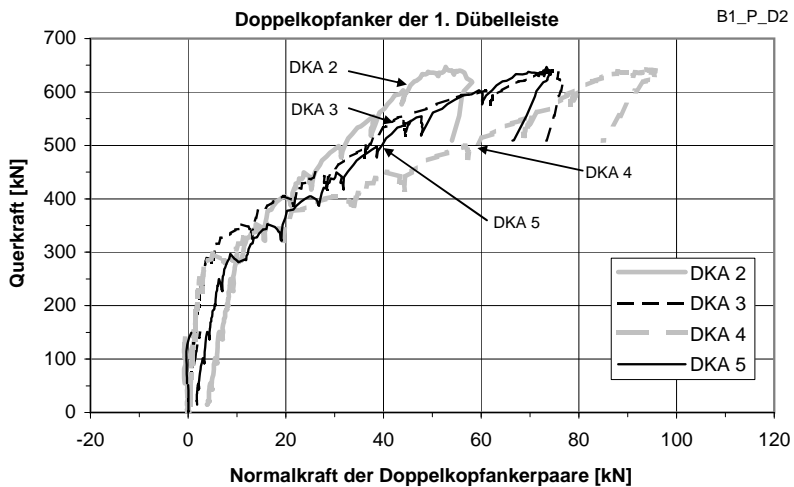
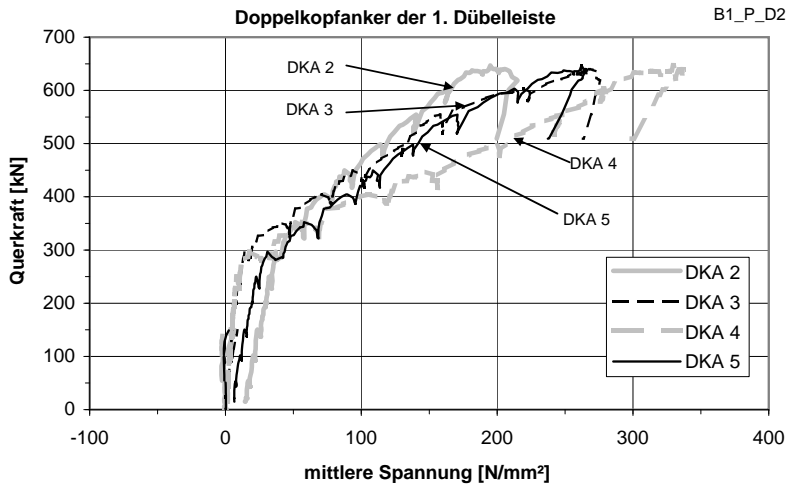




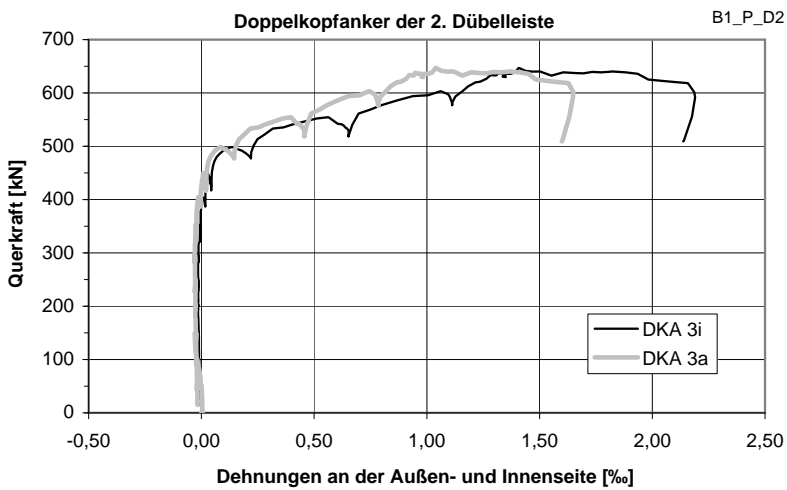
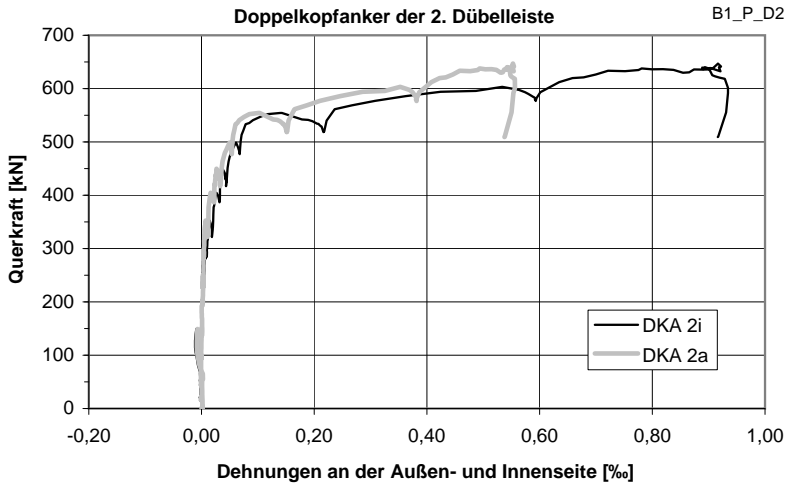
B.5.4. Doppelkopfkanker der ersten Dübelleiste

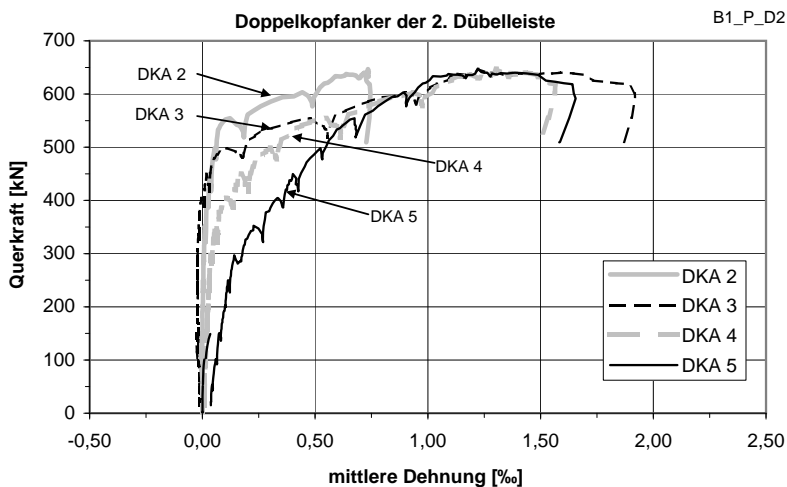
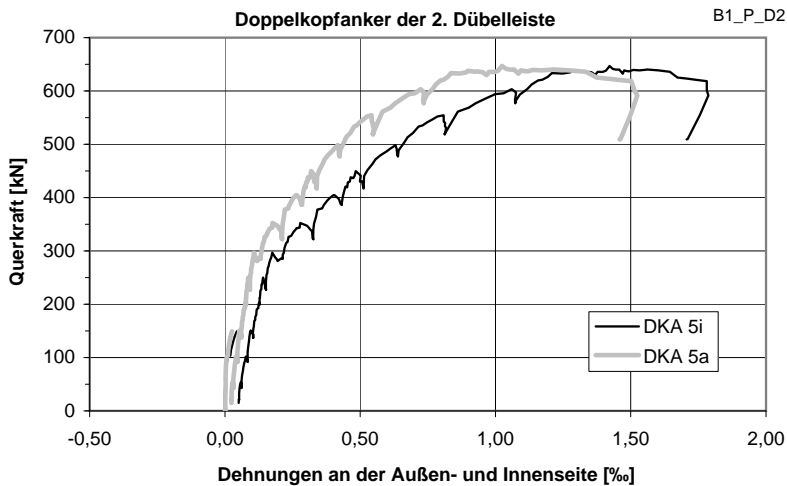
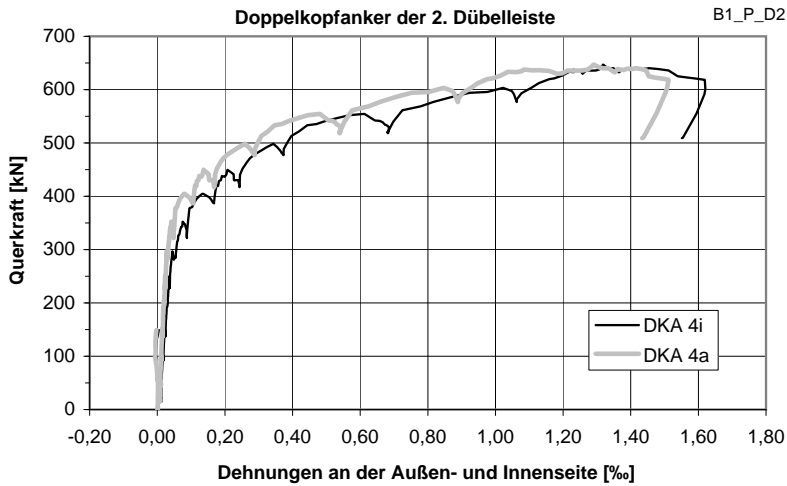


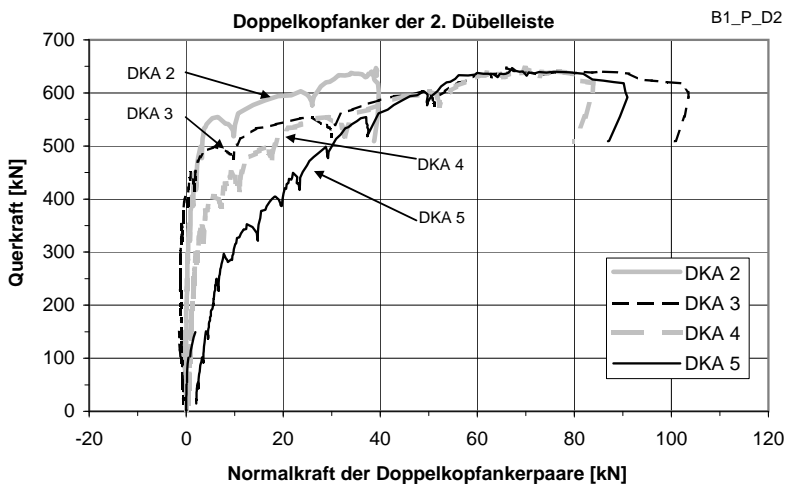
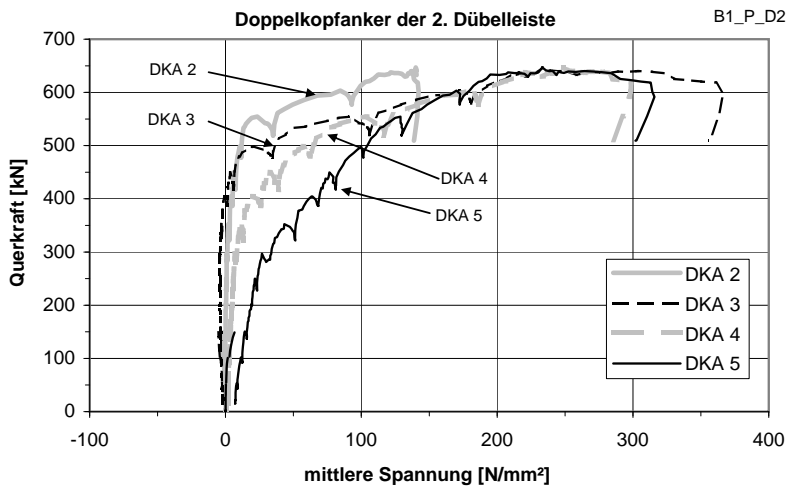




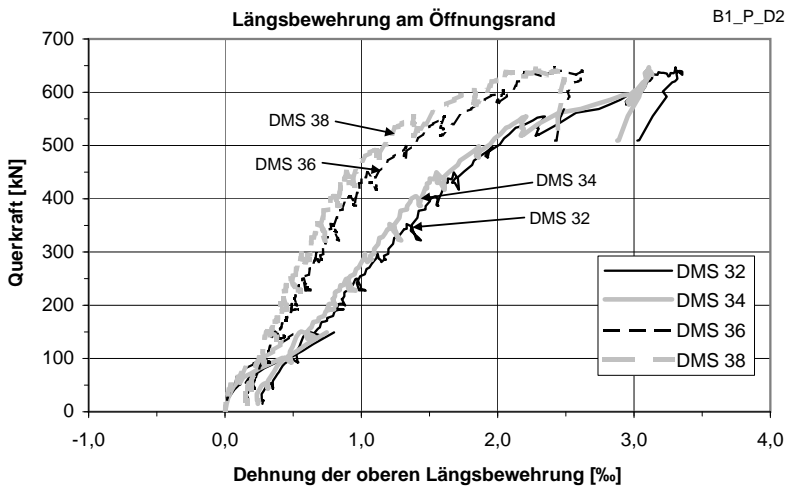
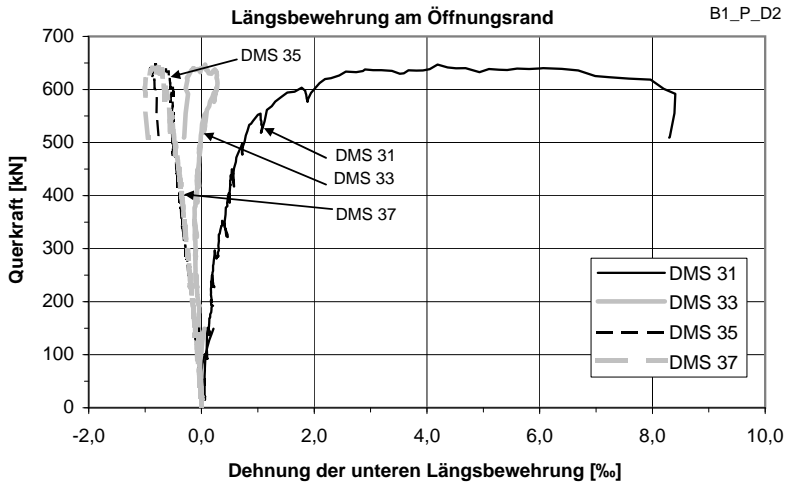
B.5.5. Doppelkopfkanker der zweiten Dübelleiste

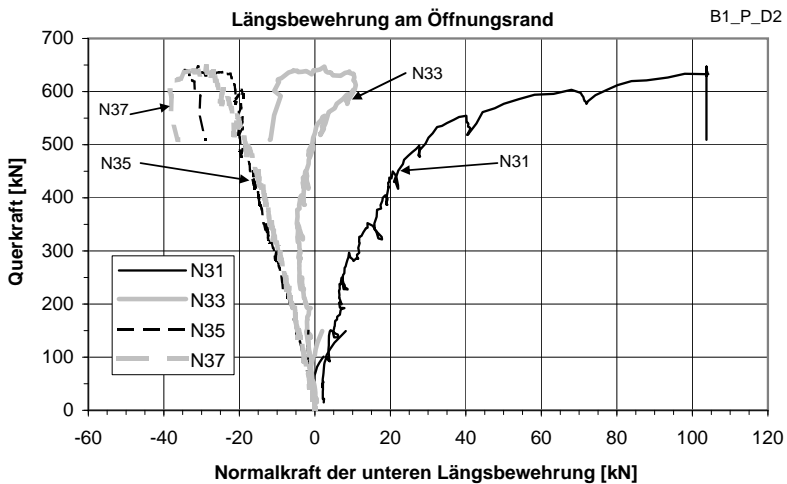
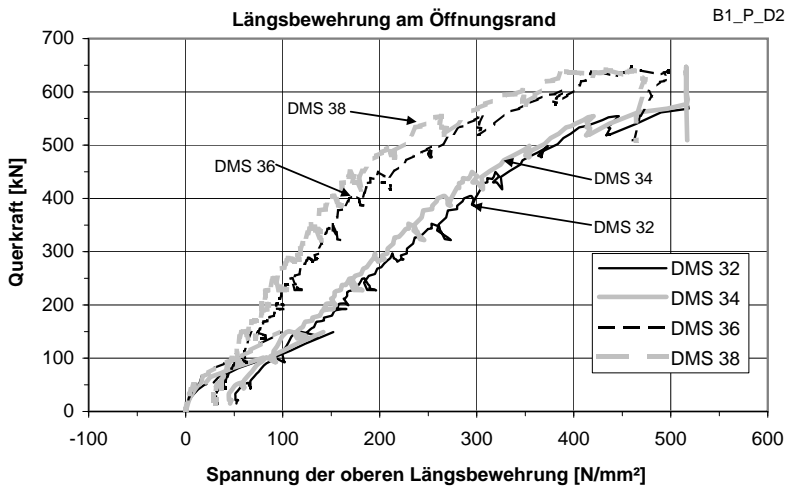
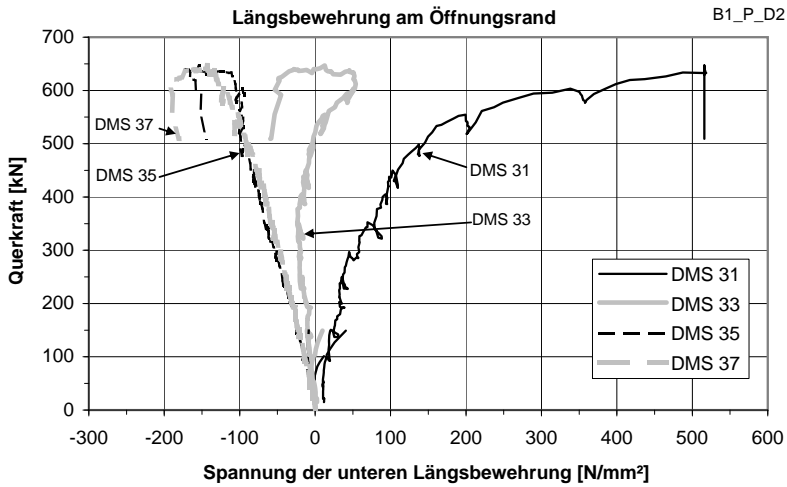


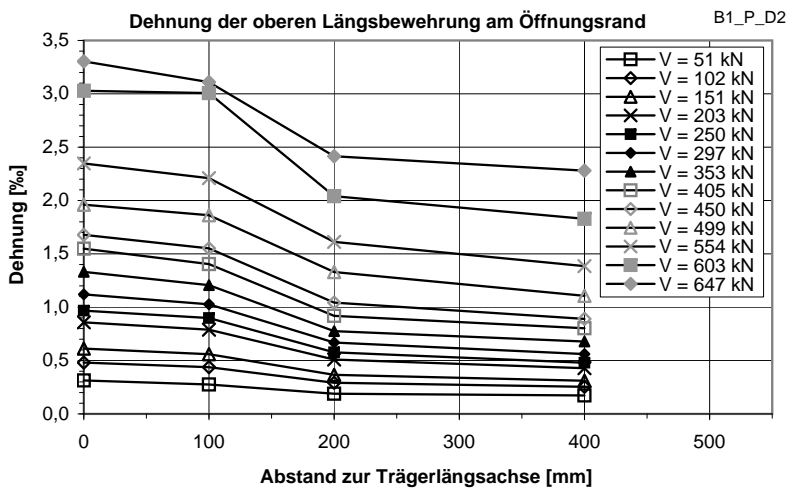
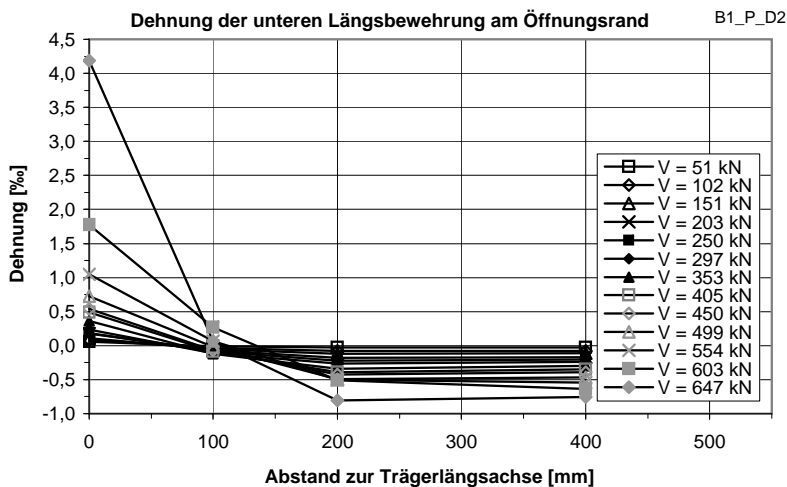
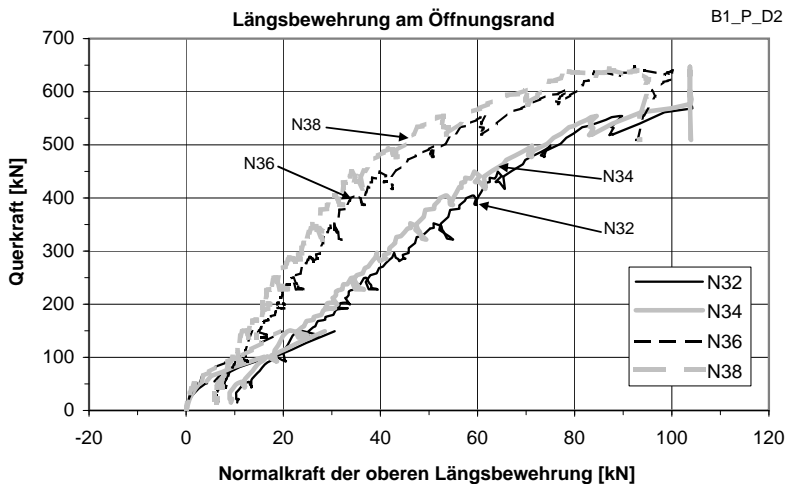


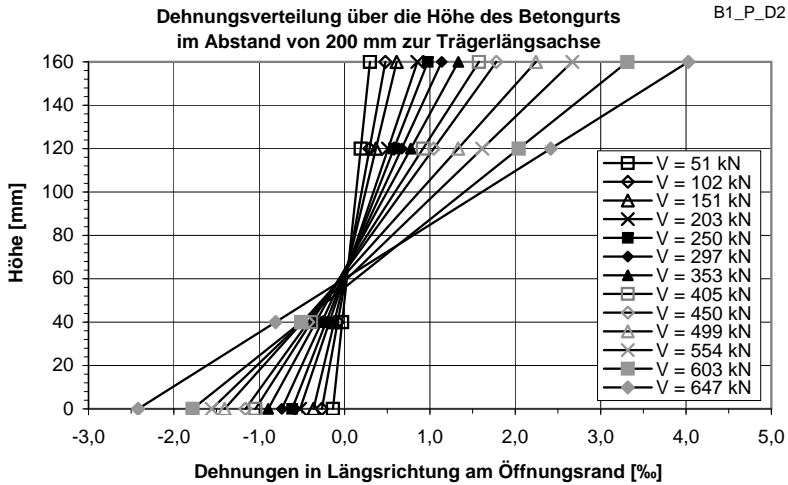
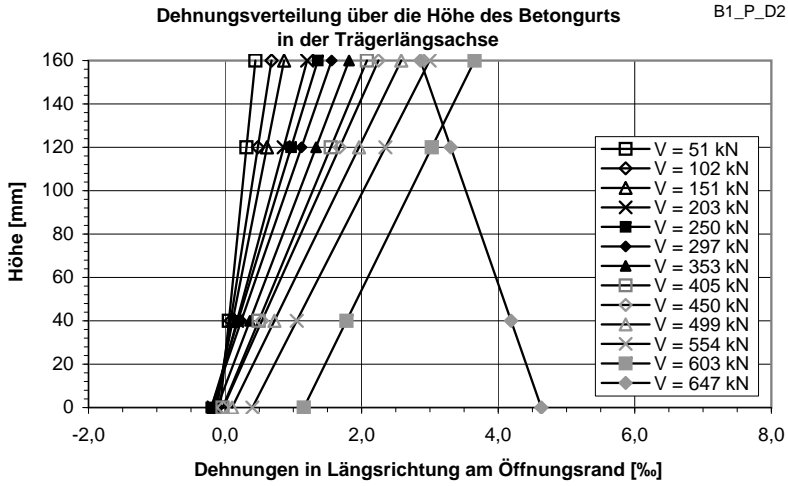


B.5.6. Längsbewehrung

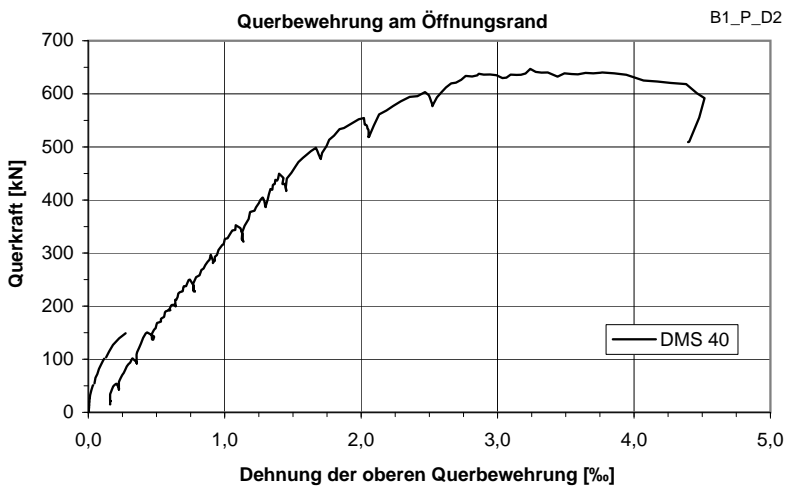
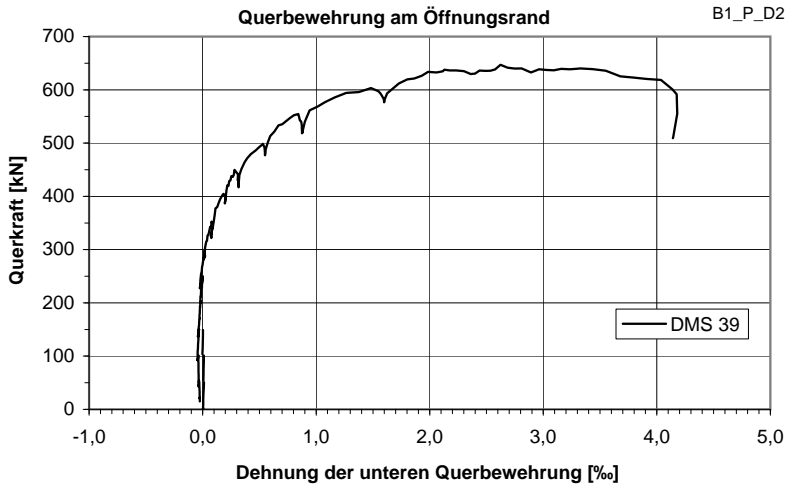


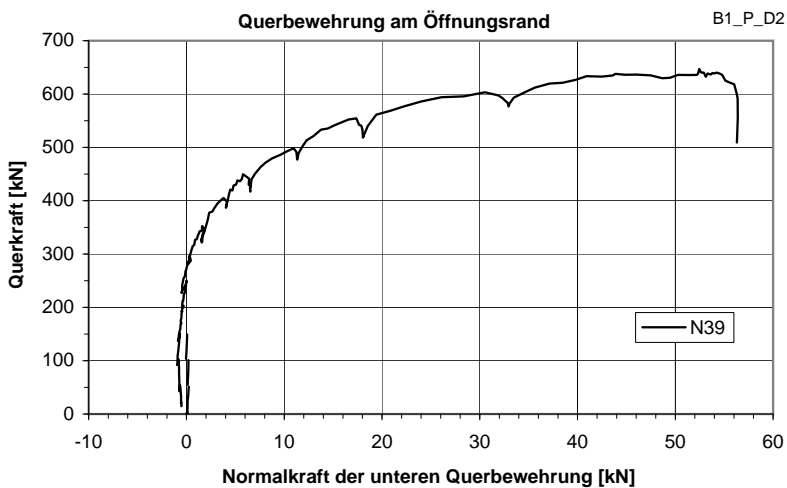
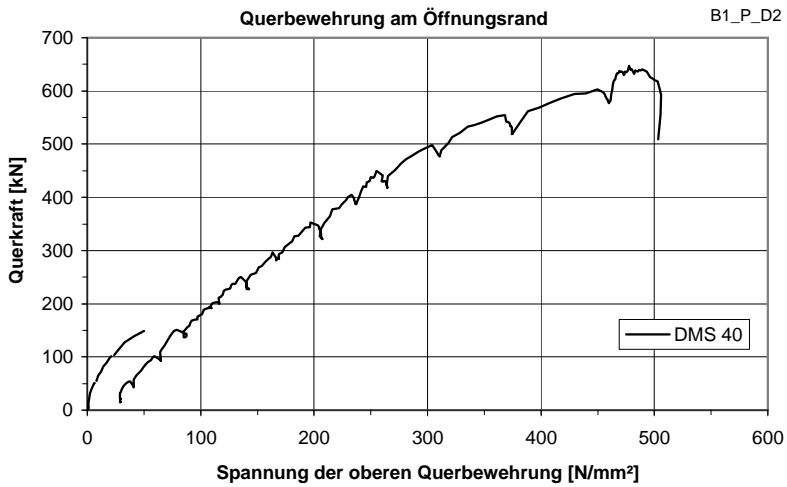
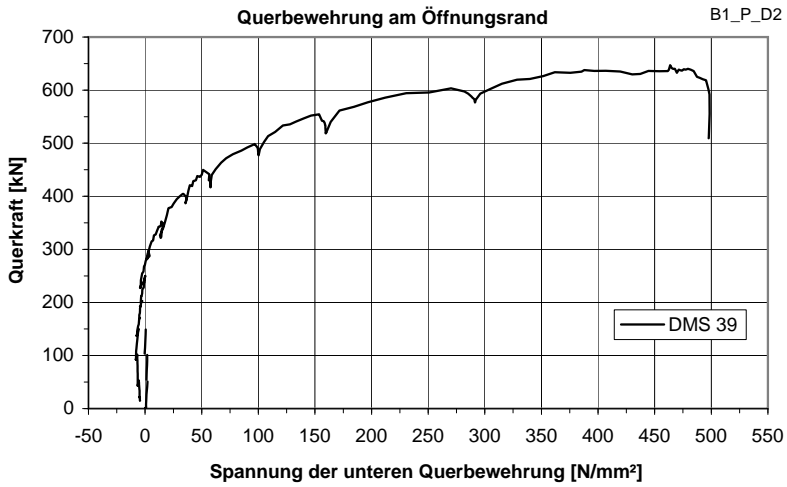


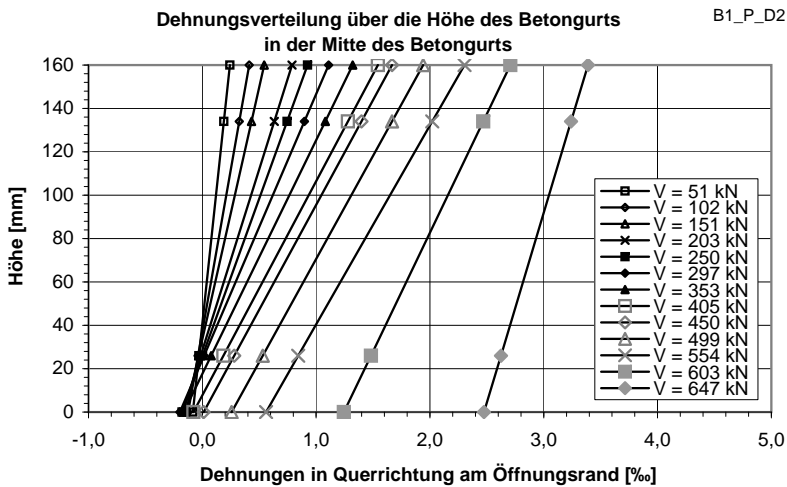
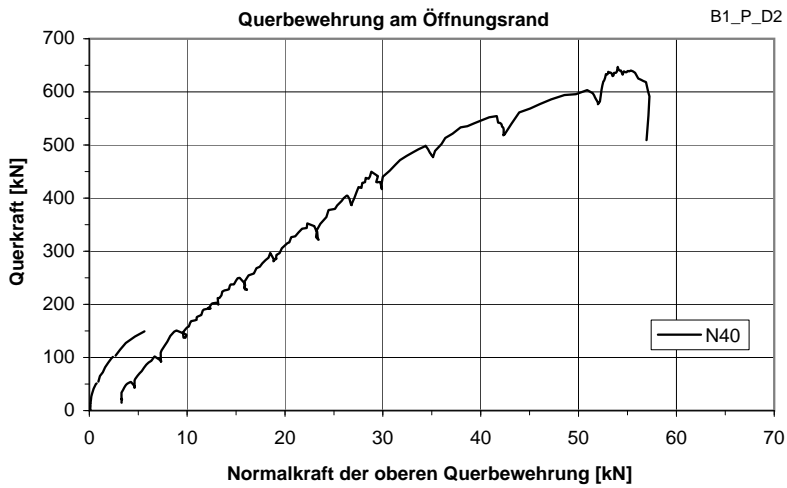




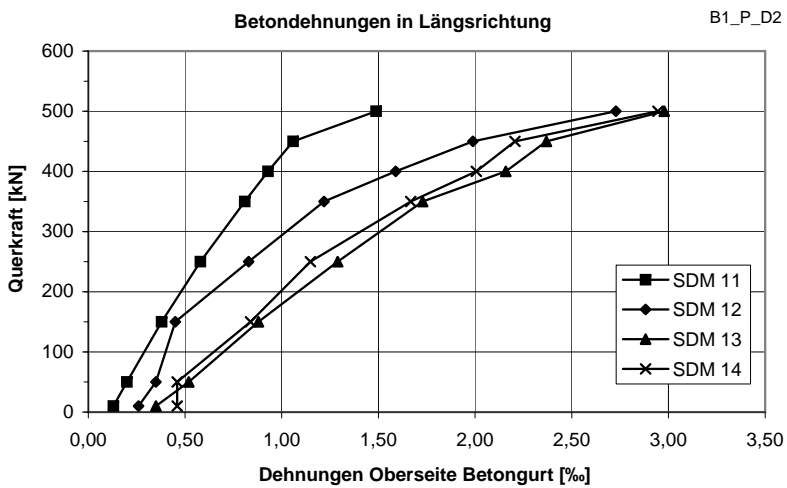
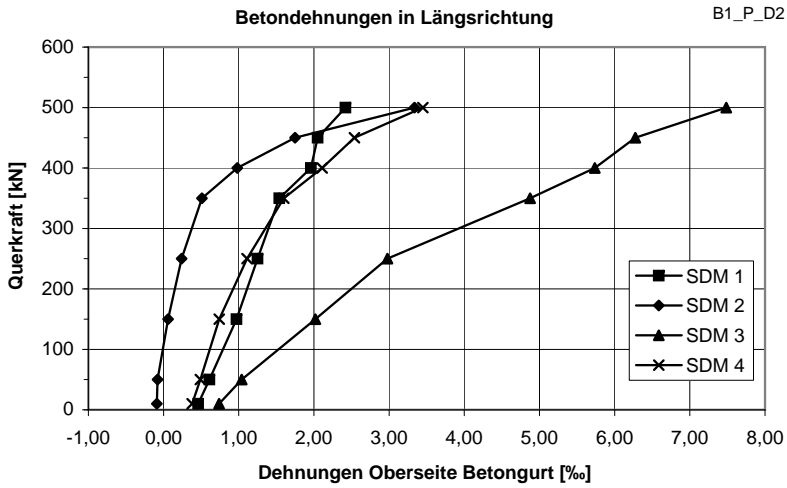
B.5.7. Querbewehrung

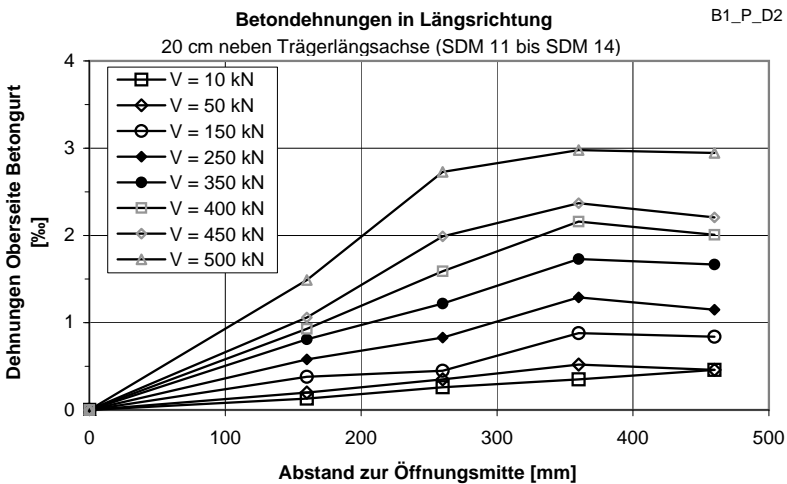
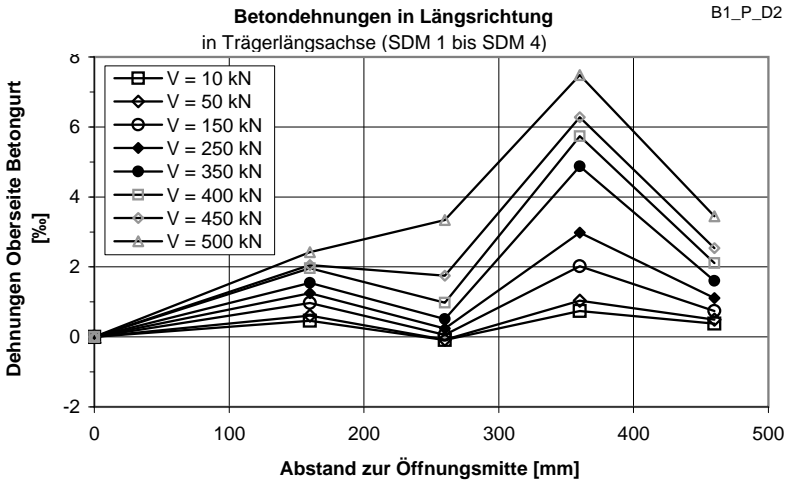
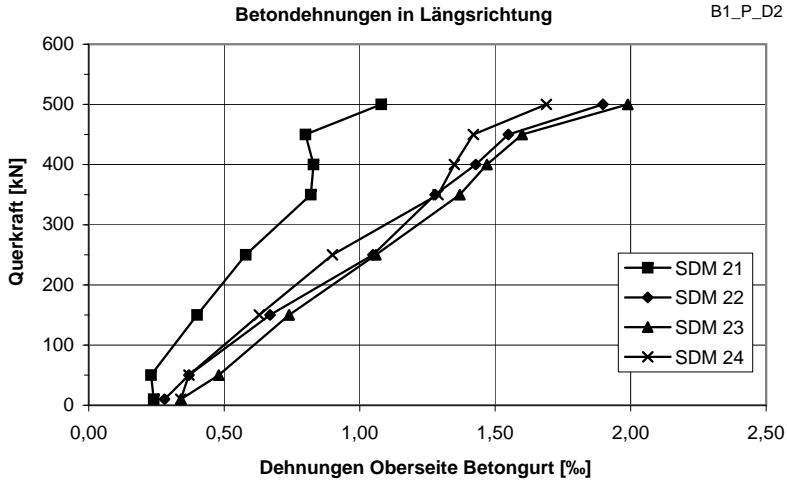


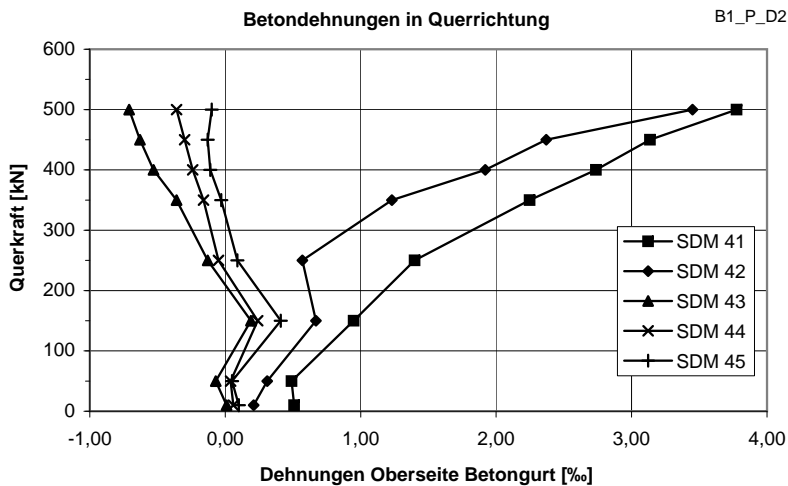
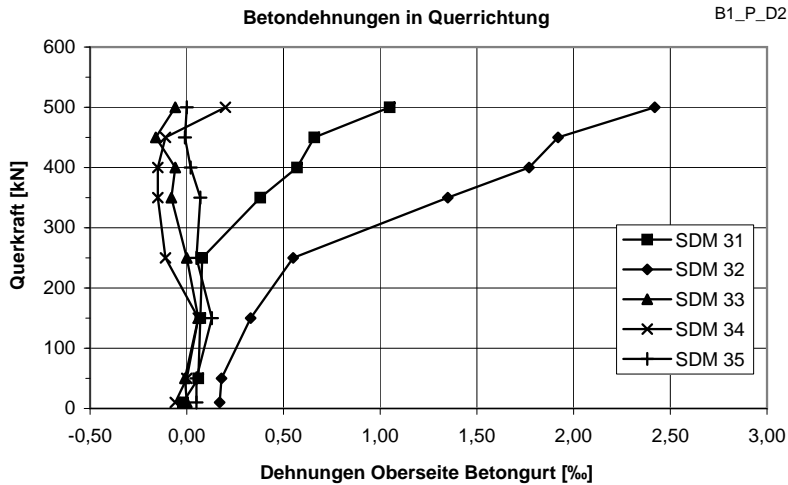
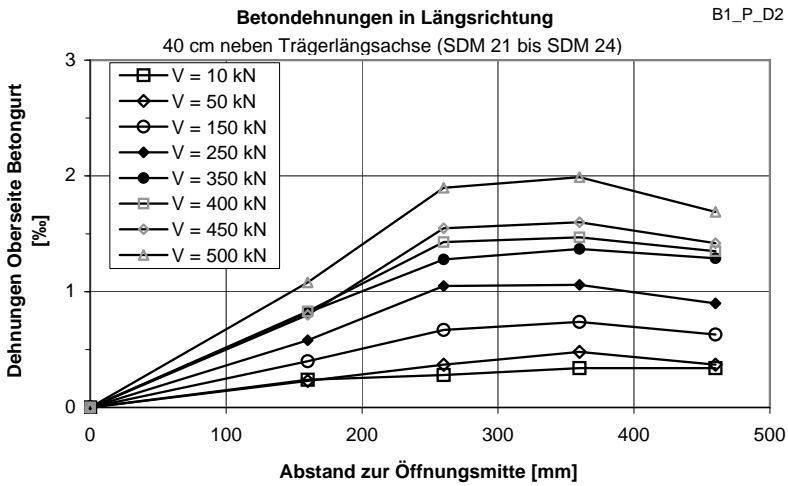


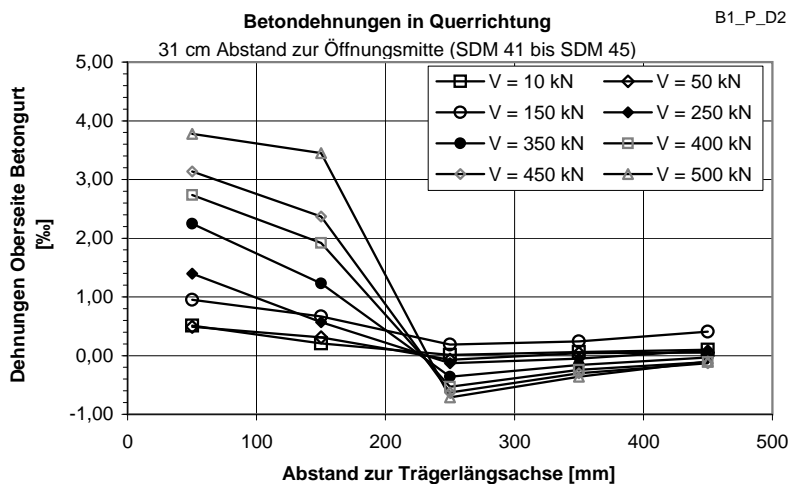
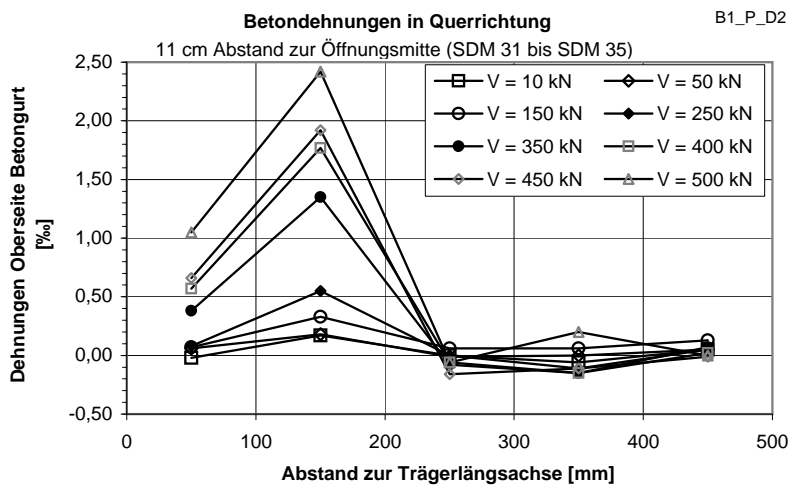
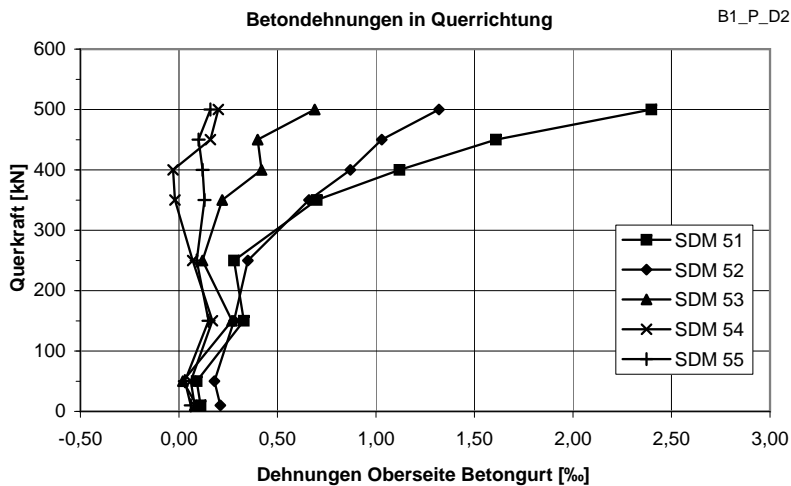


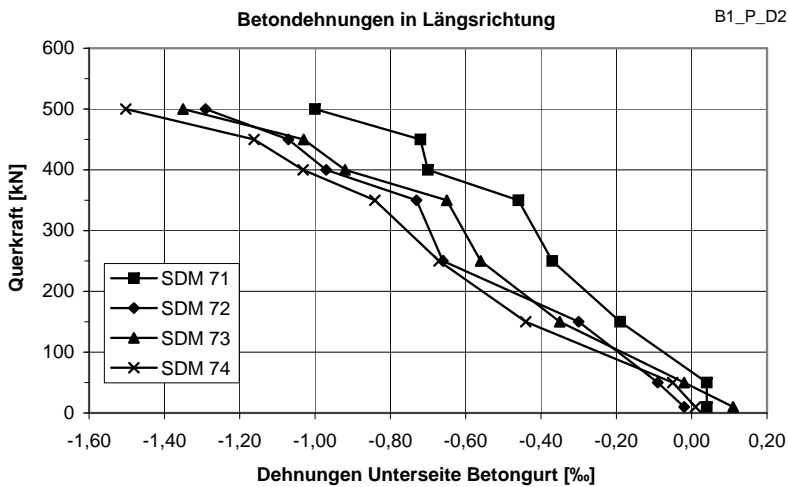
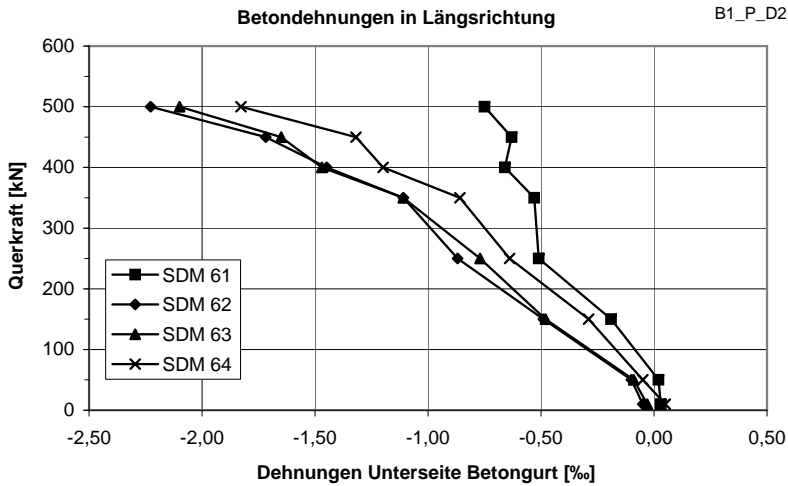
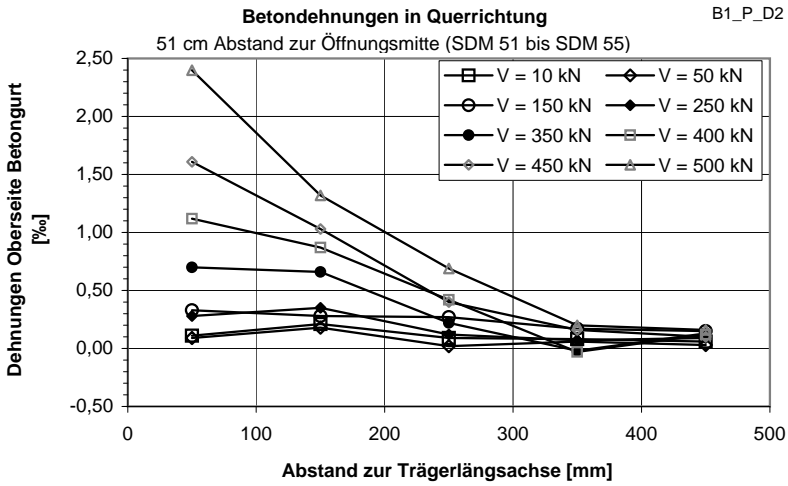
B.5.8. Betondehnungen

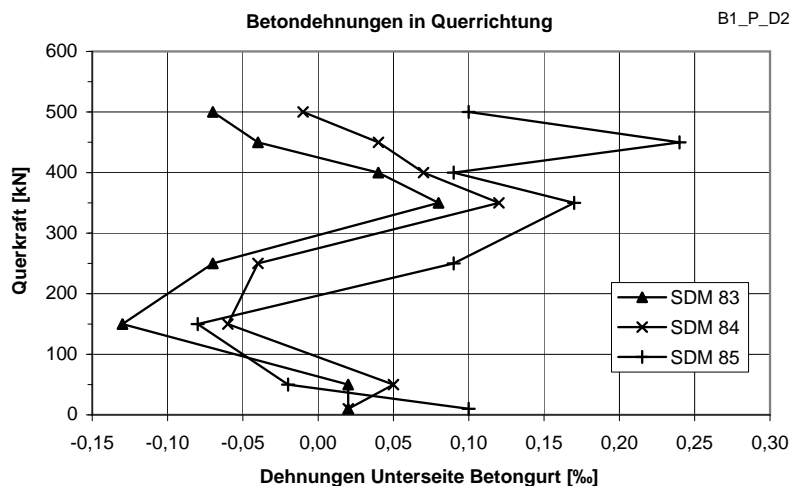
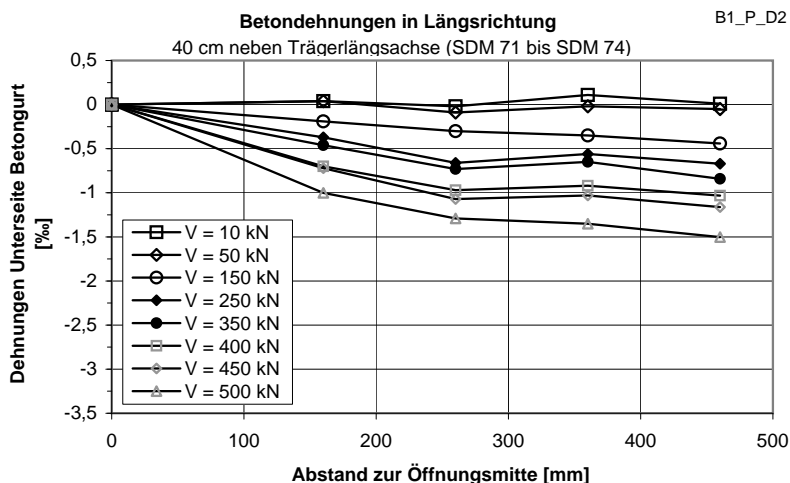
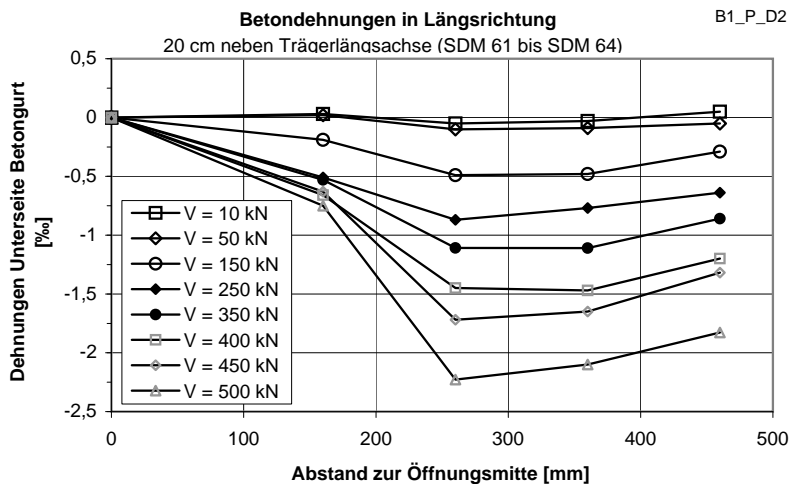


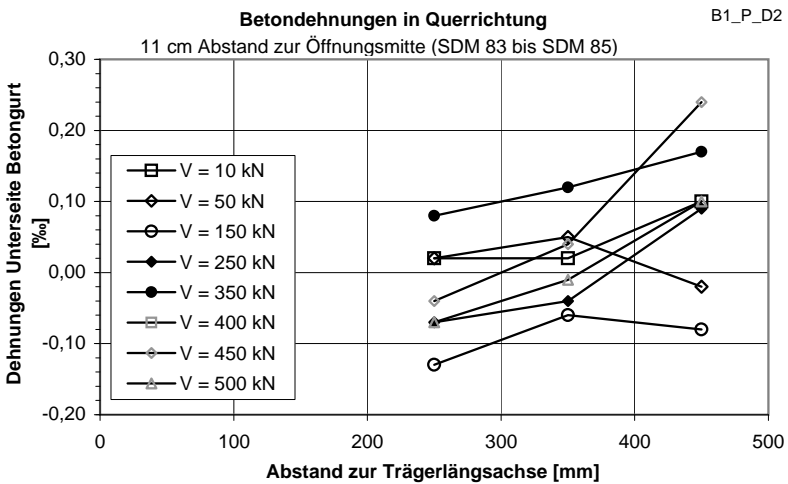
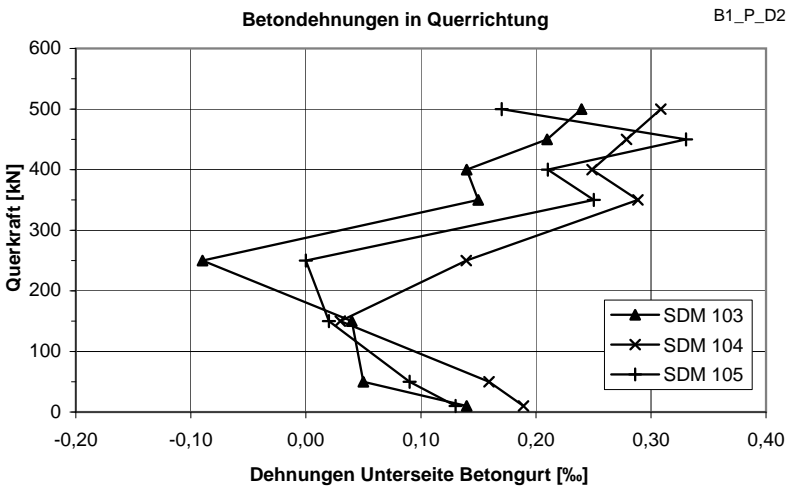
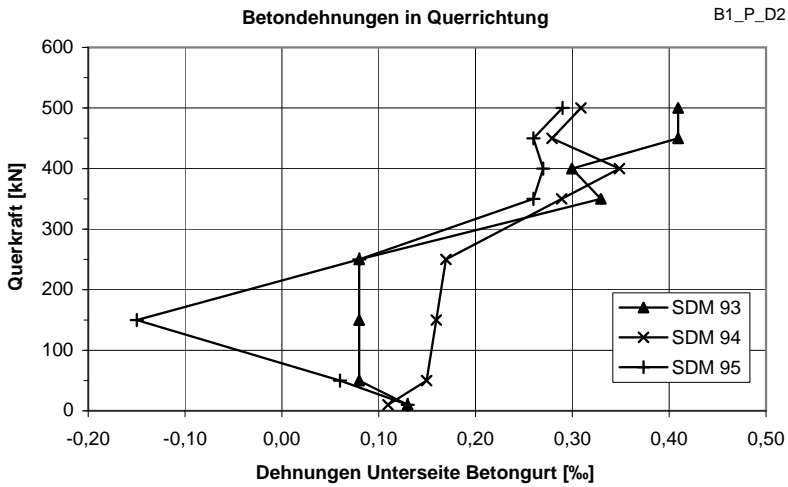


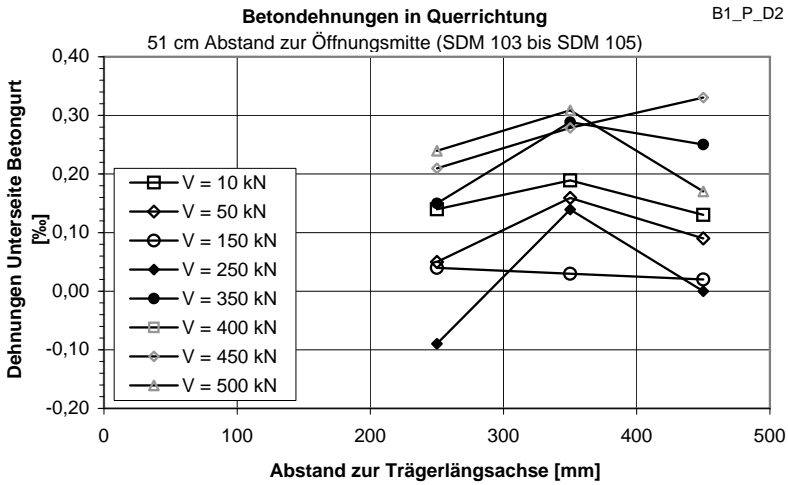
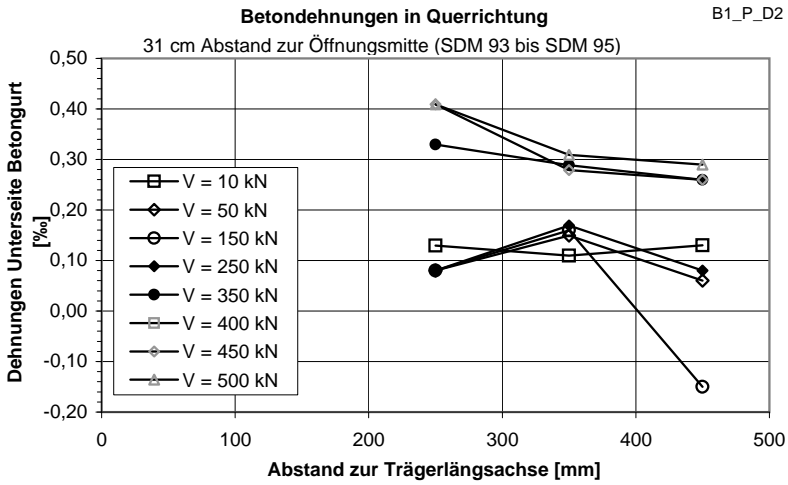






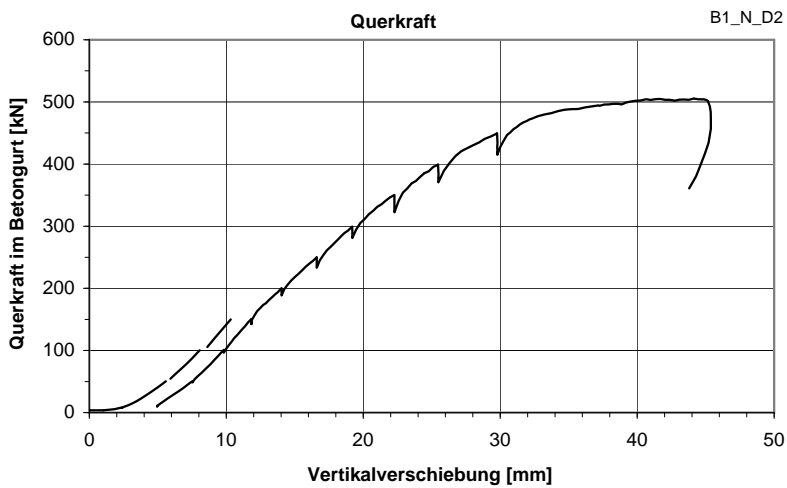
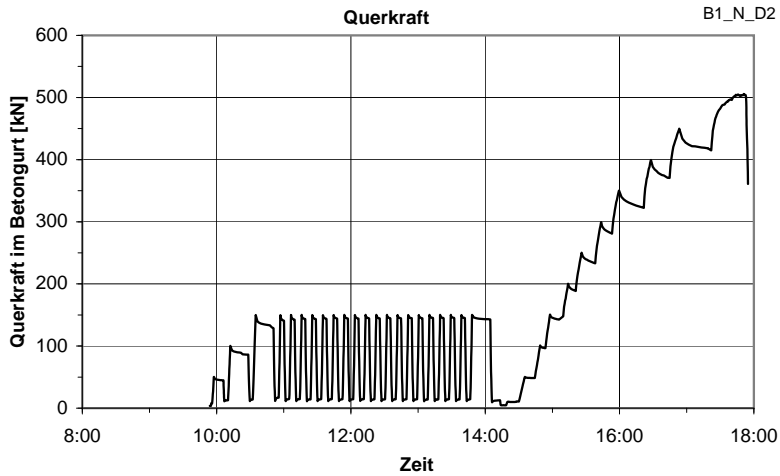


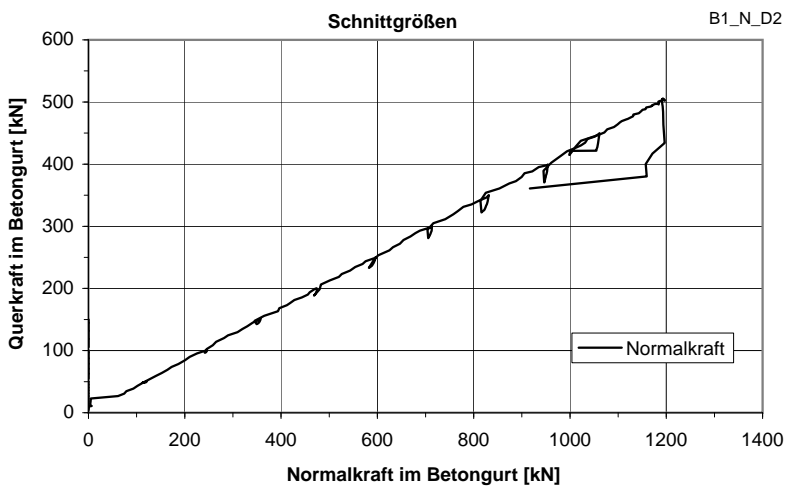
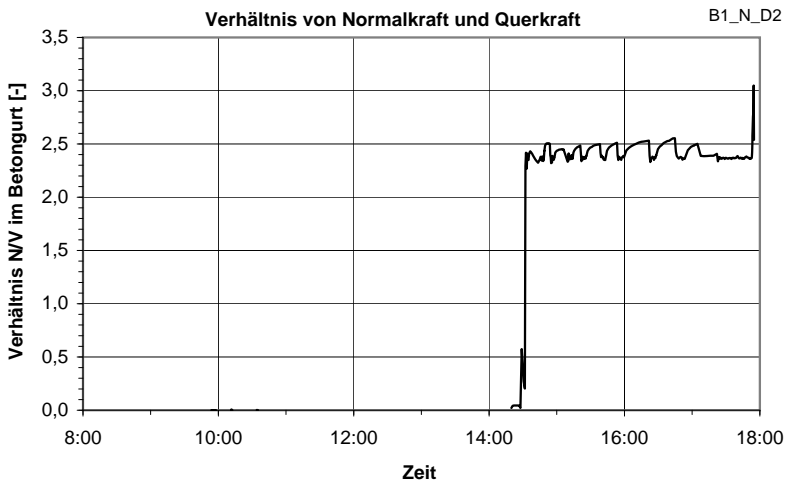
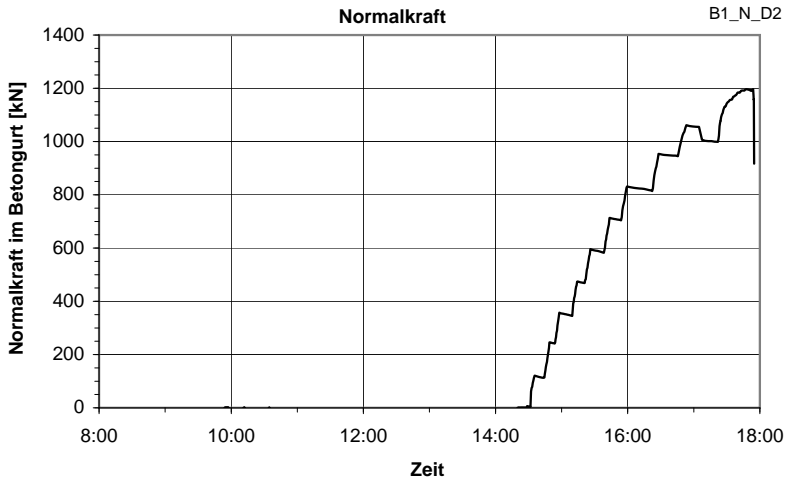


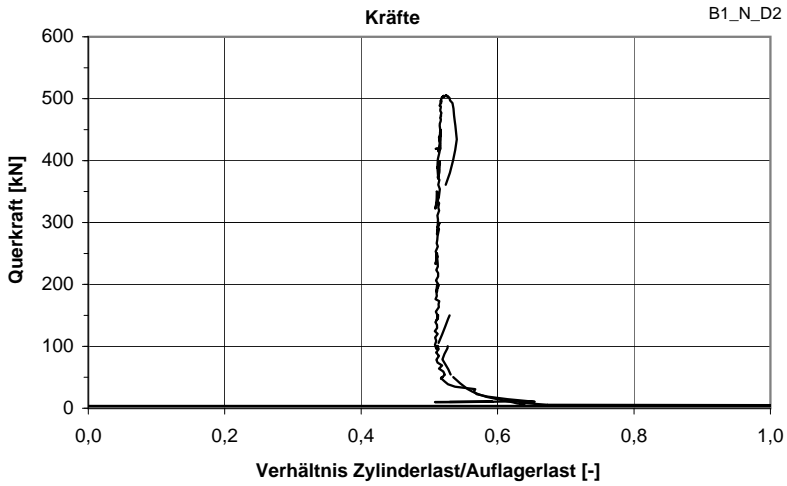
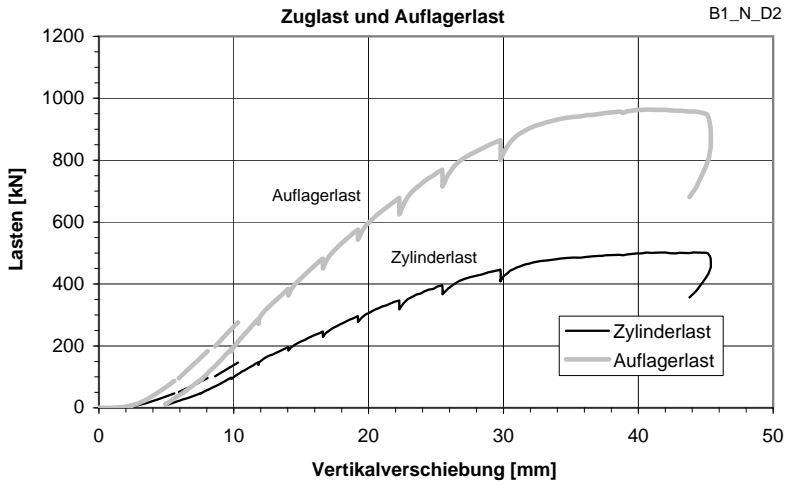


B.6. Versuch B1_N_D2

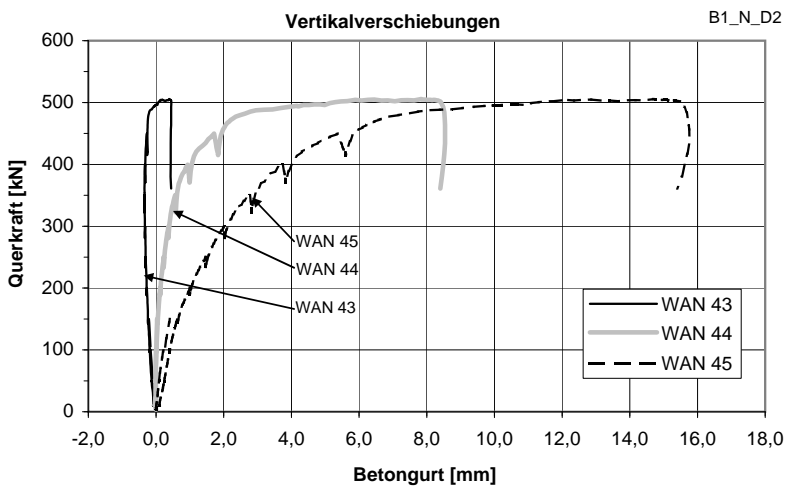
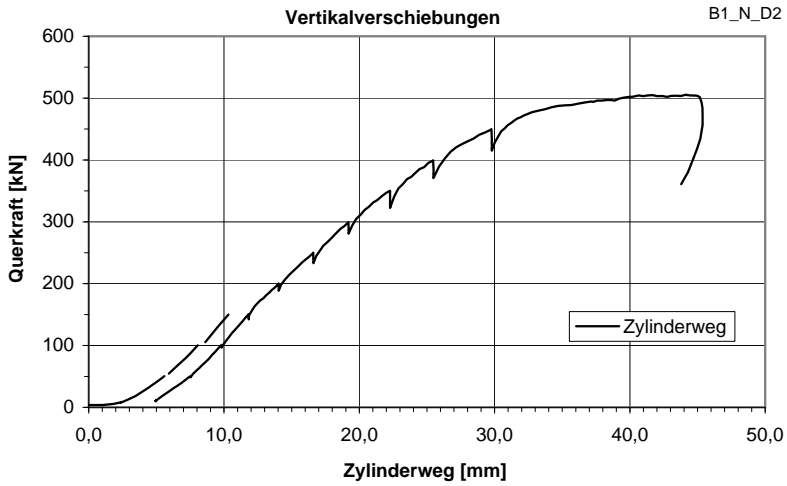
B.6.1. Kräfte

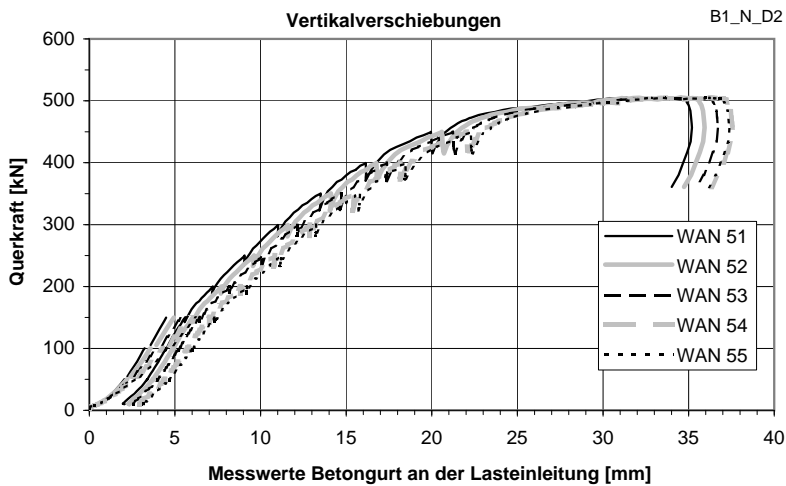
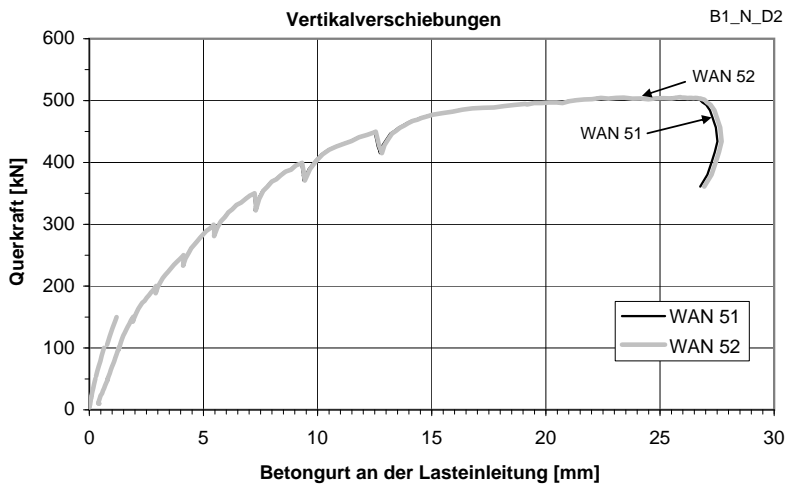
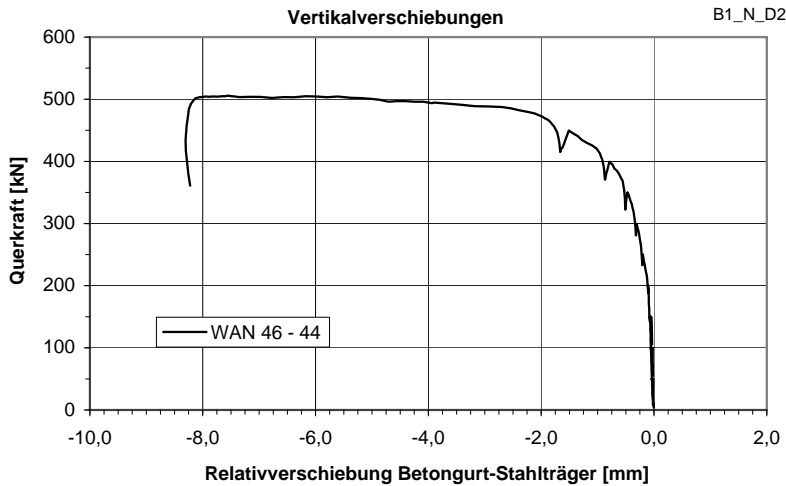




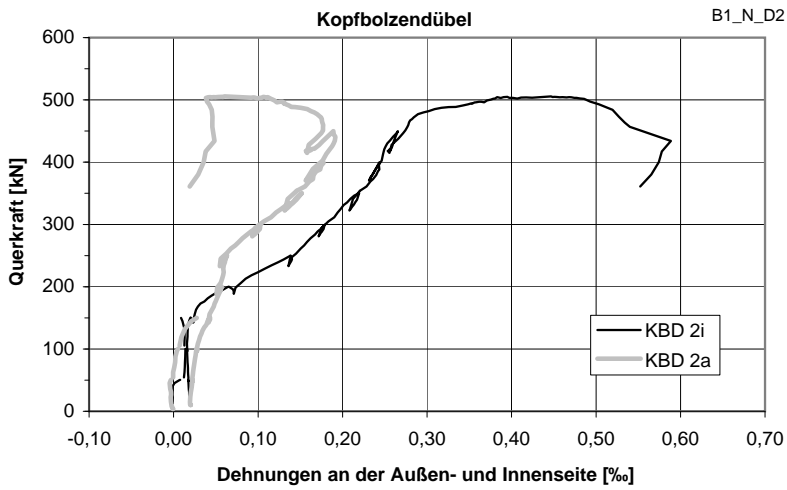
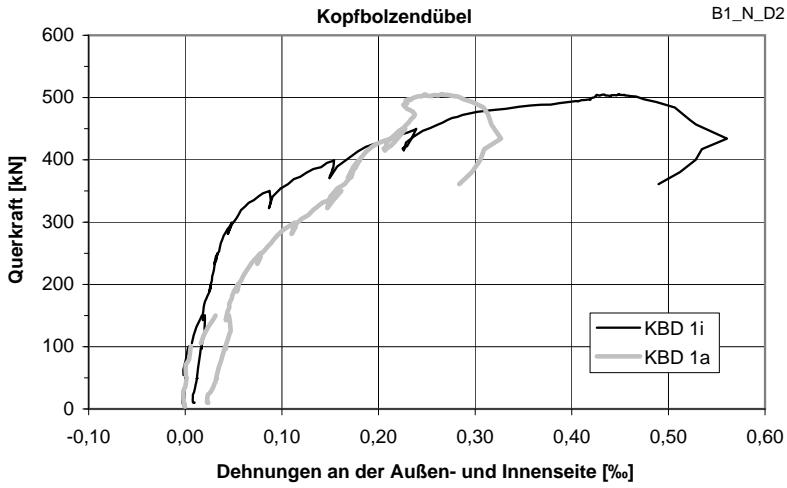


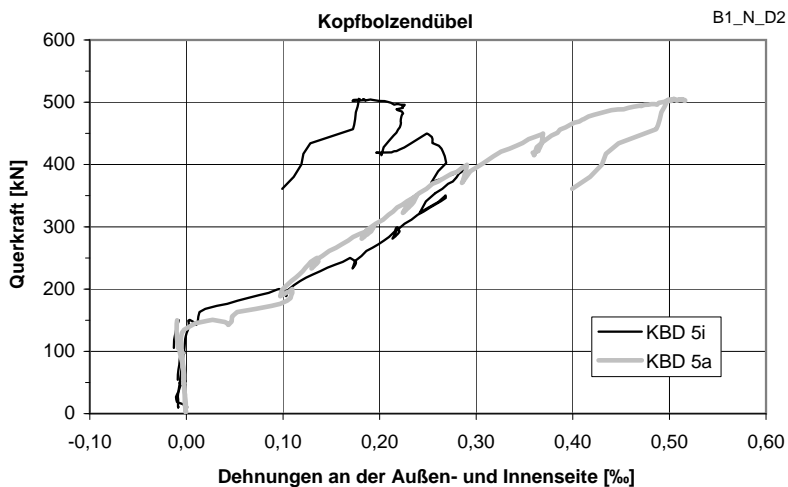
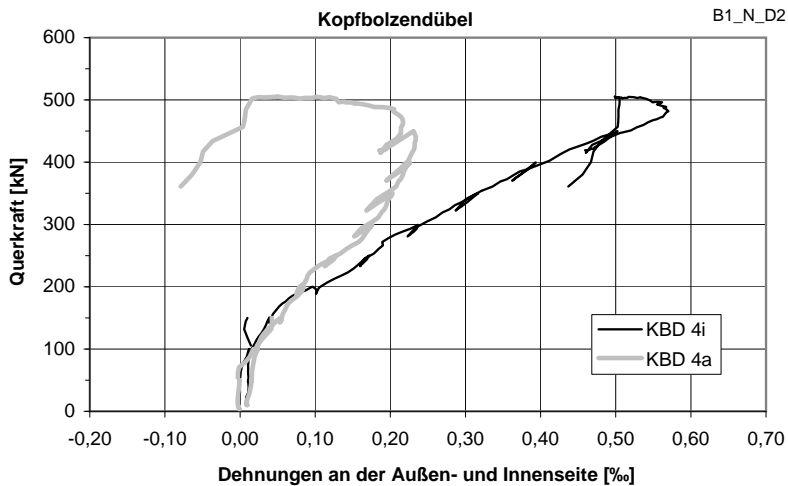
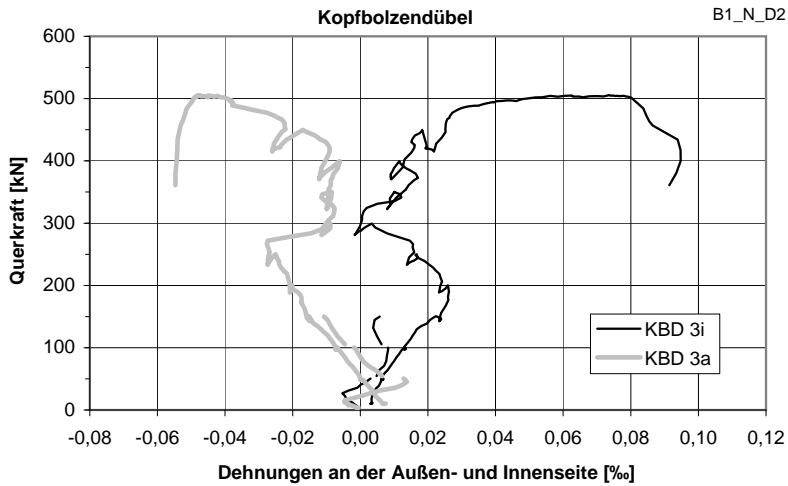
B.6.2. Verformungen

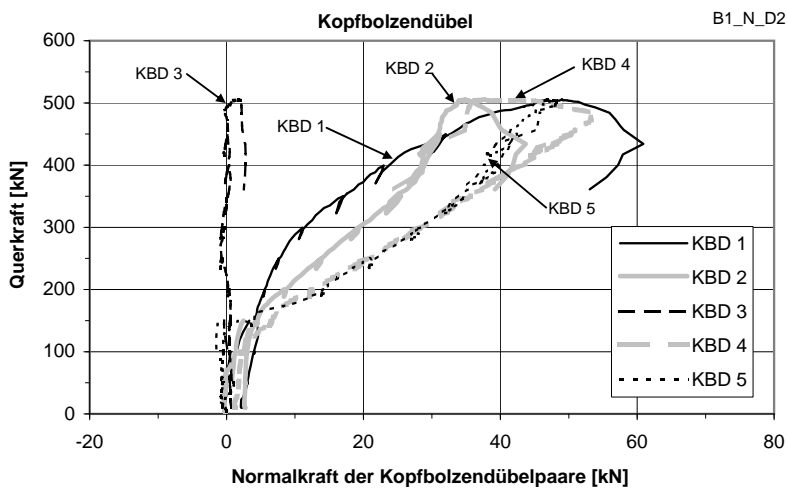
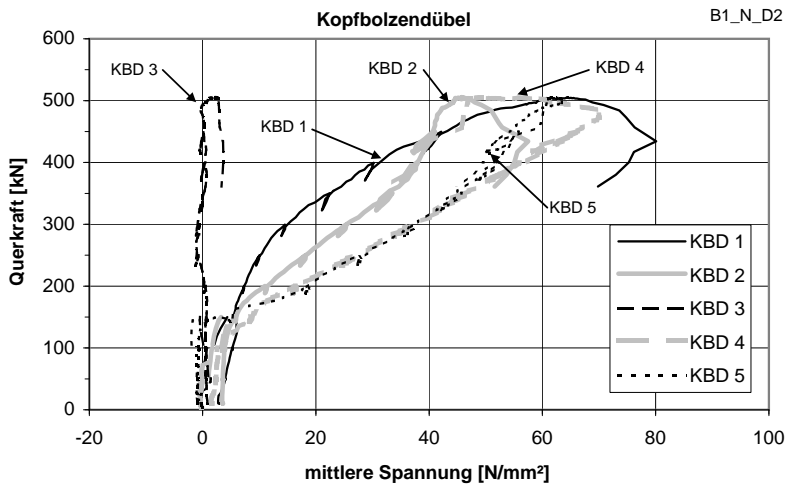
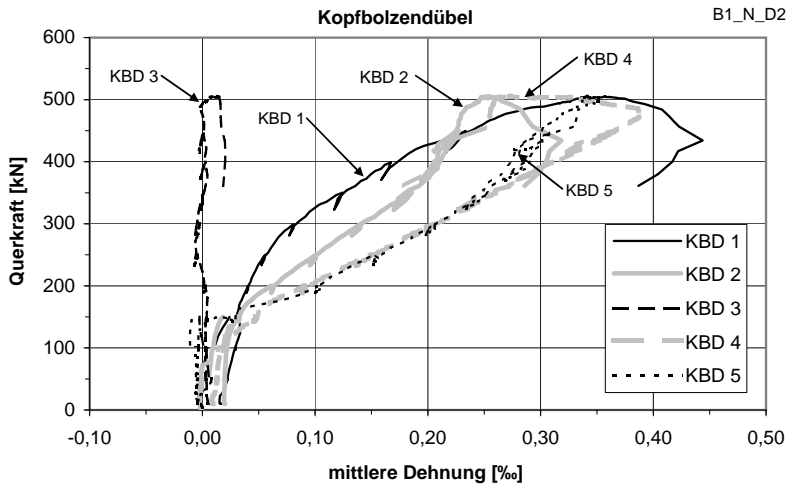




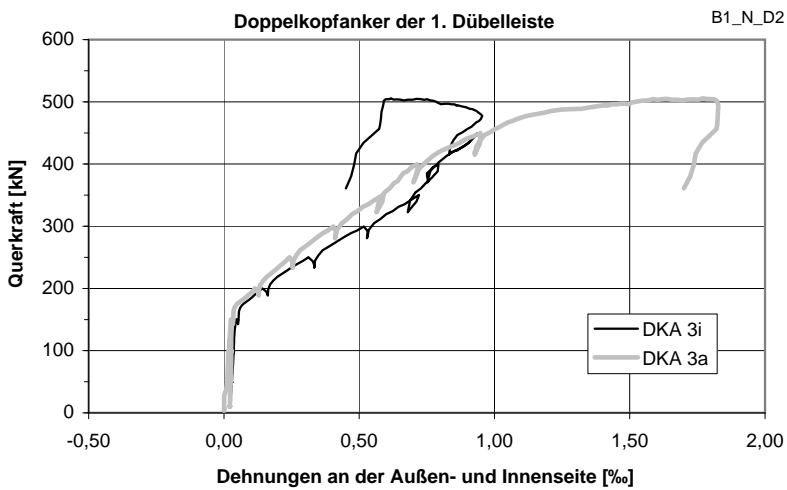
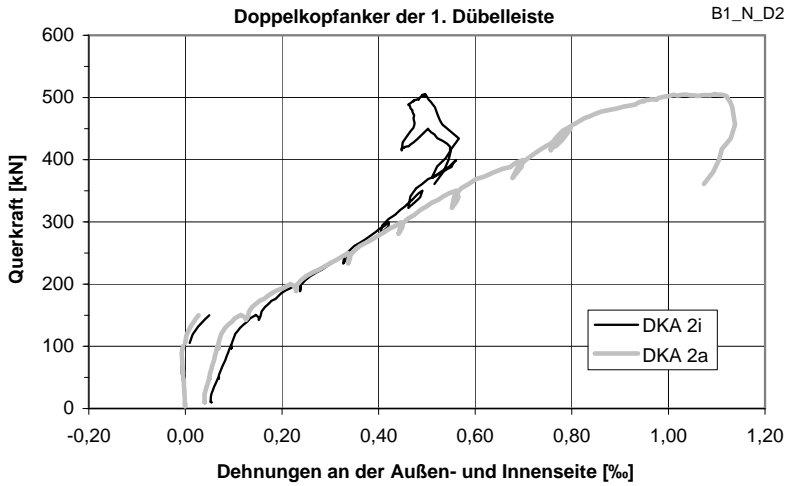
B.6.3. Kopfbolzendübel

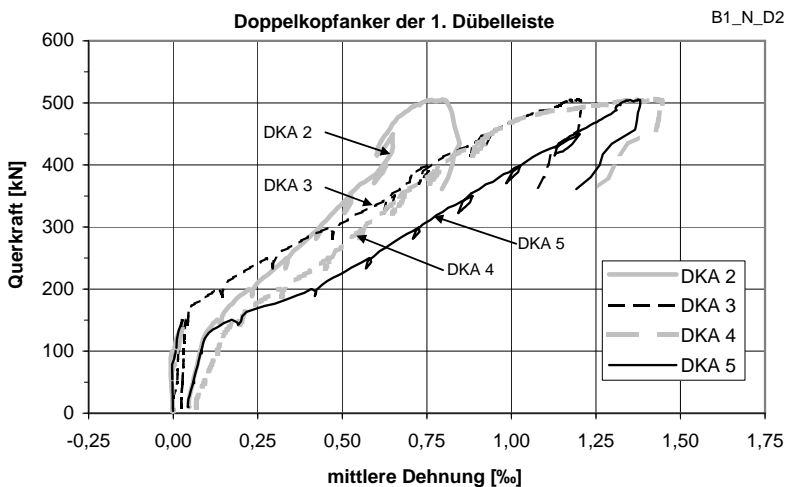
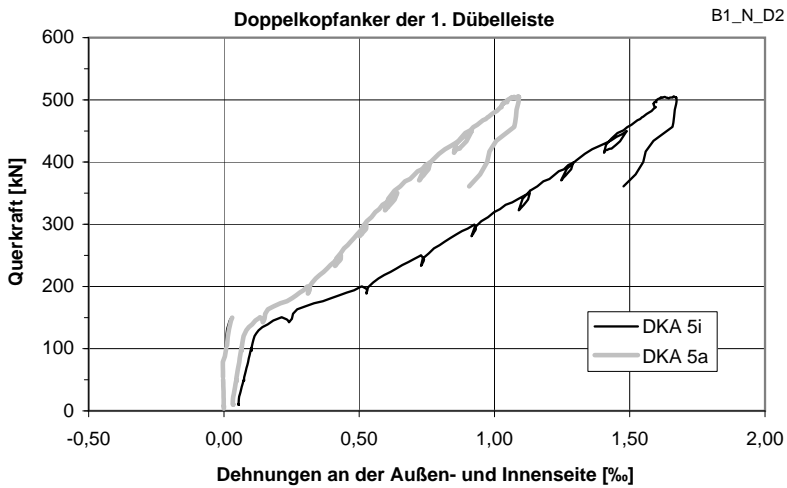
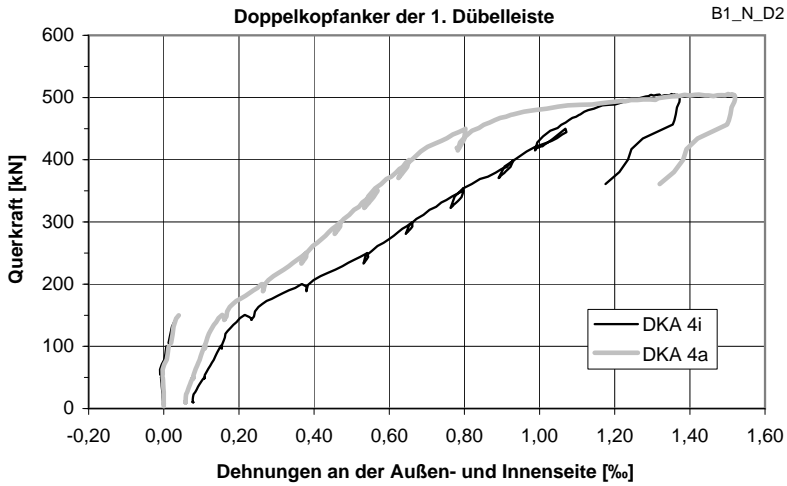


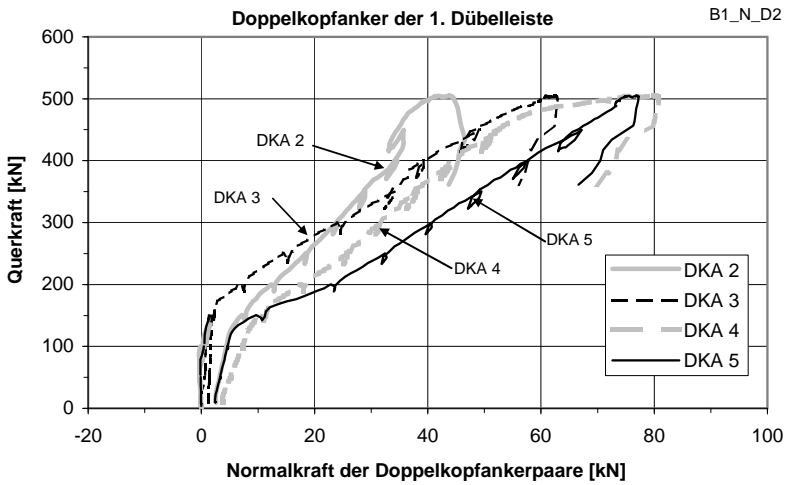
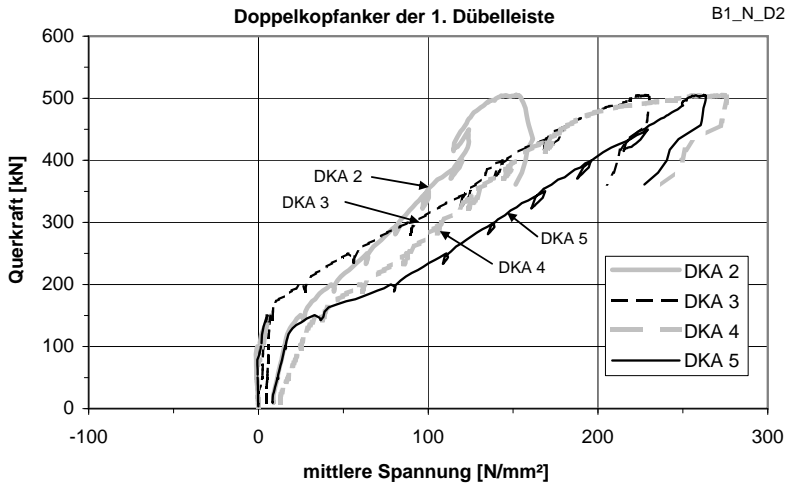




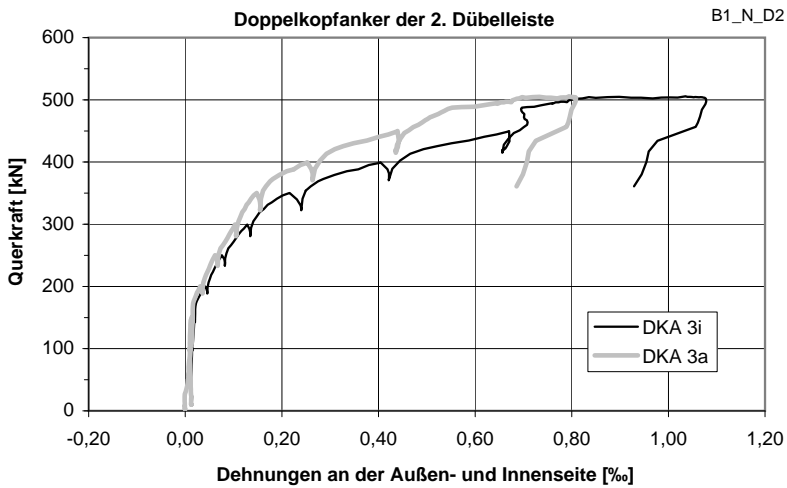
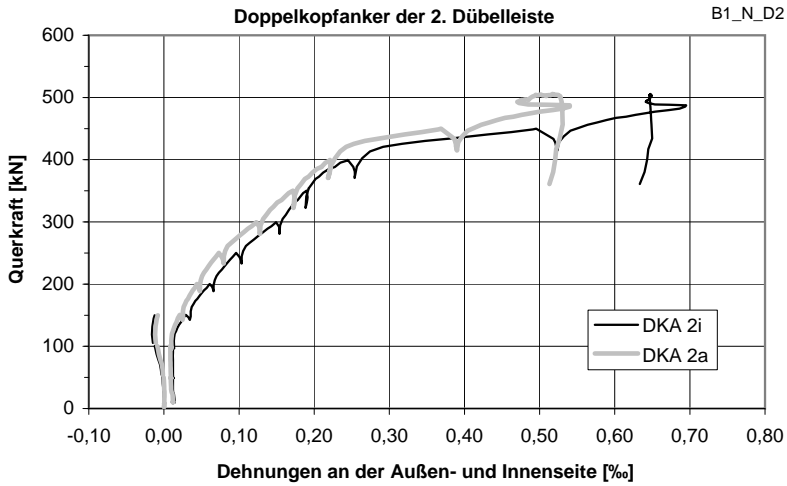
B.6.4. Doppelkopfkanker der ersten Dübelleiste

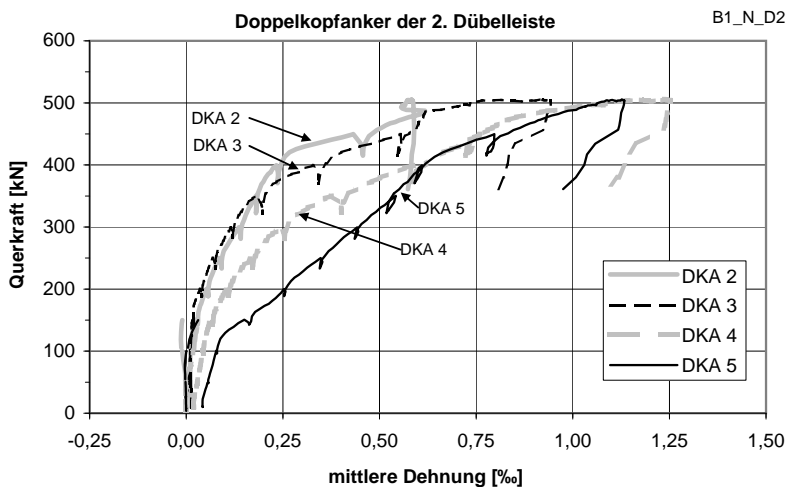
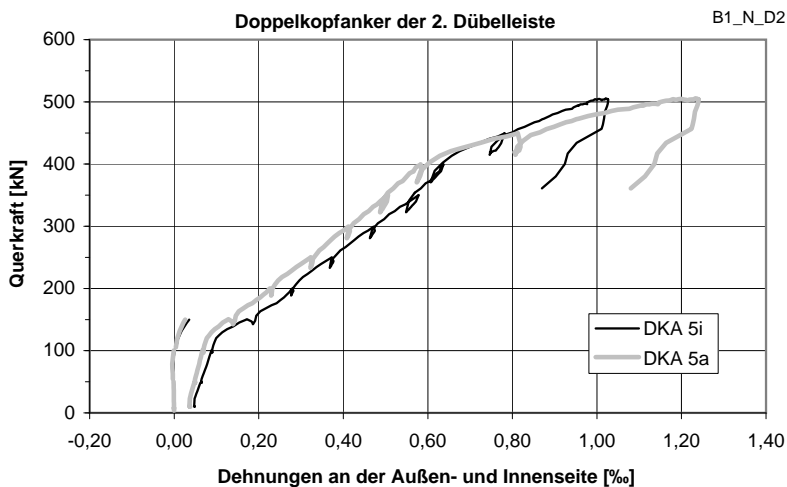
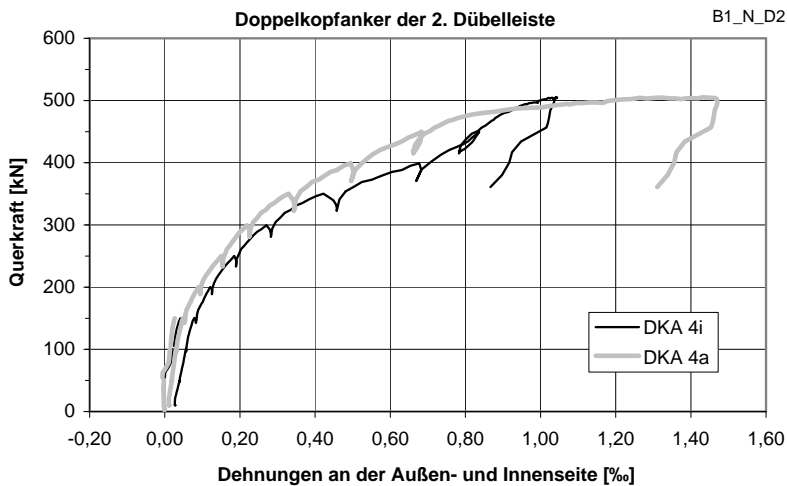


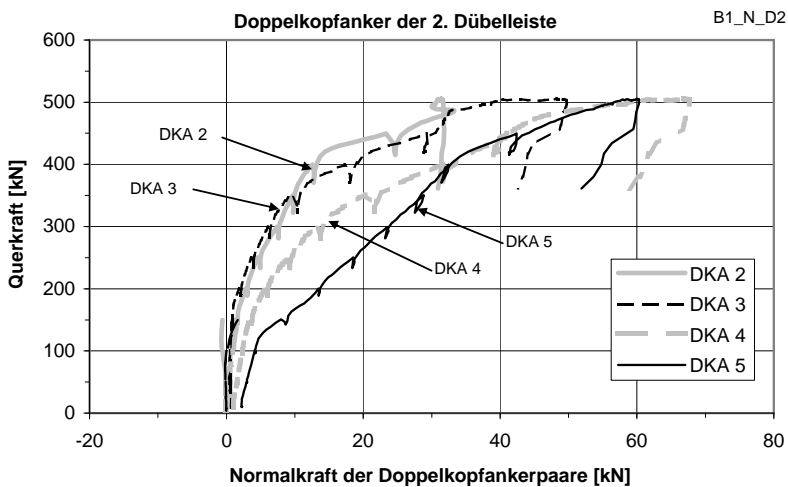
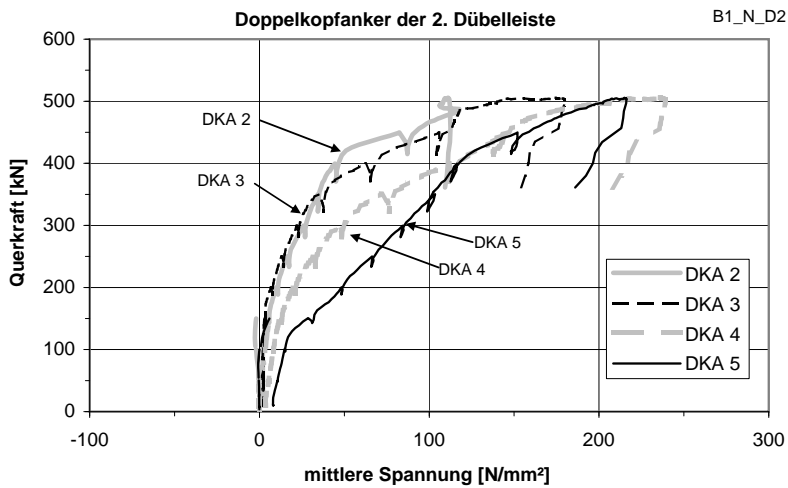




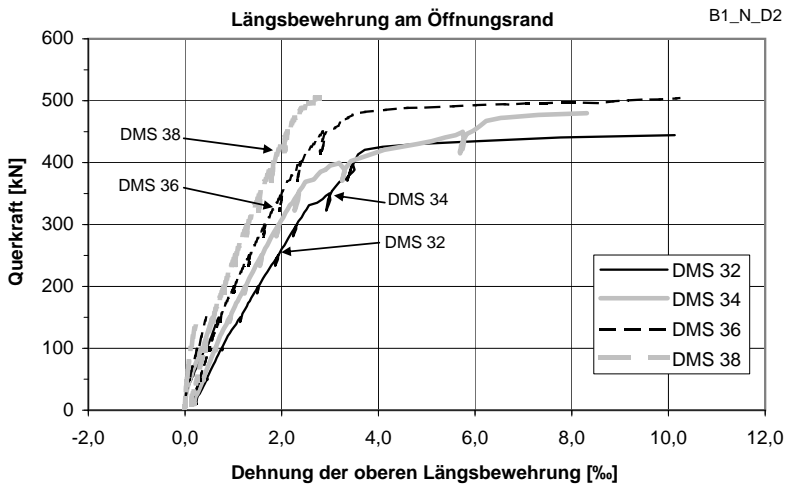
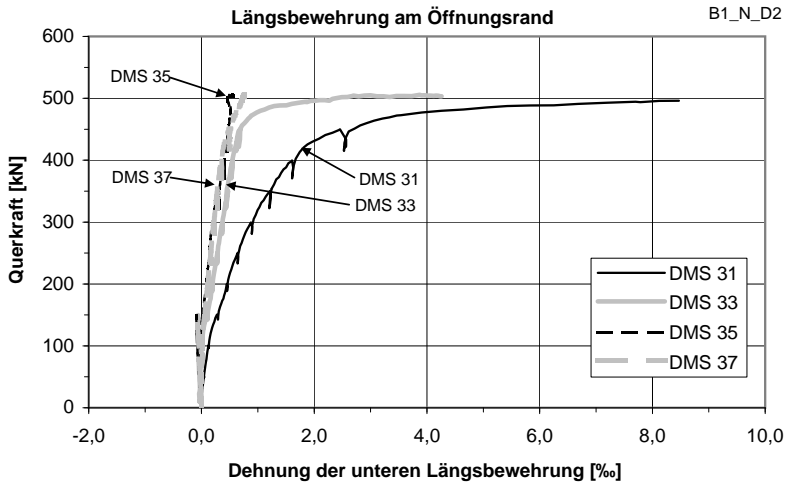
B.6.5. Doppelkopfkanker der zweiten Dübelleiste

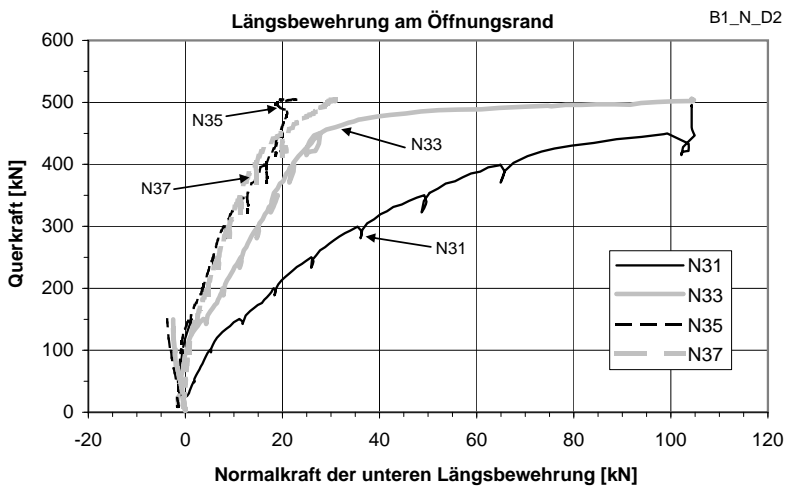
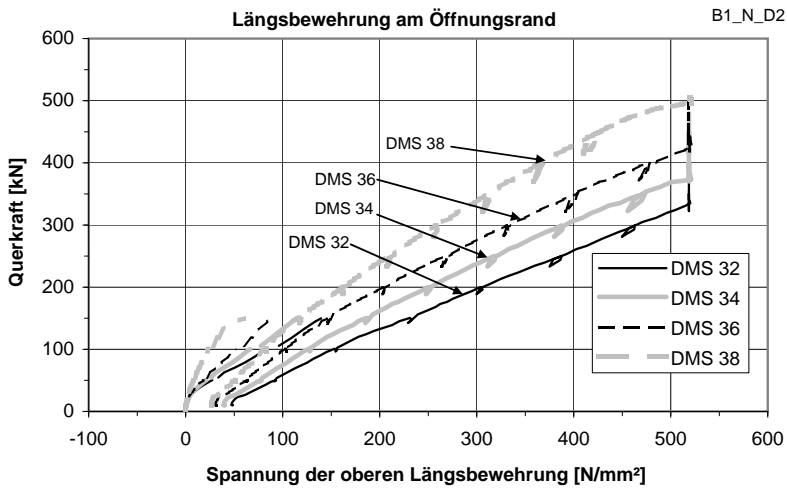
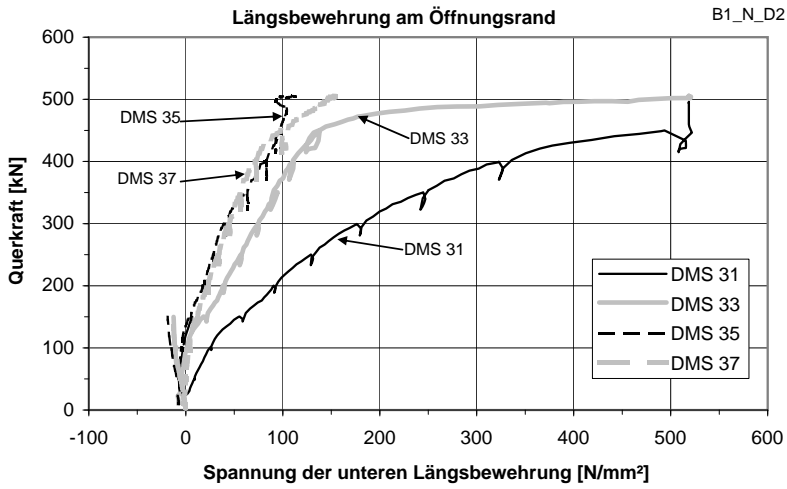


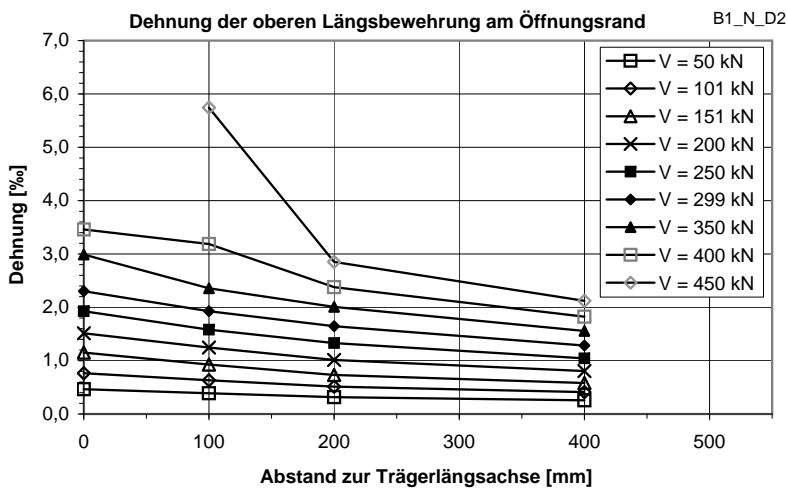
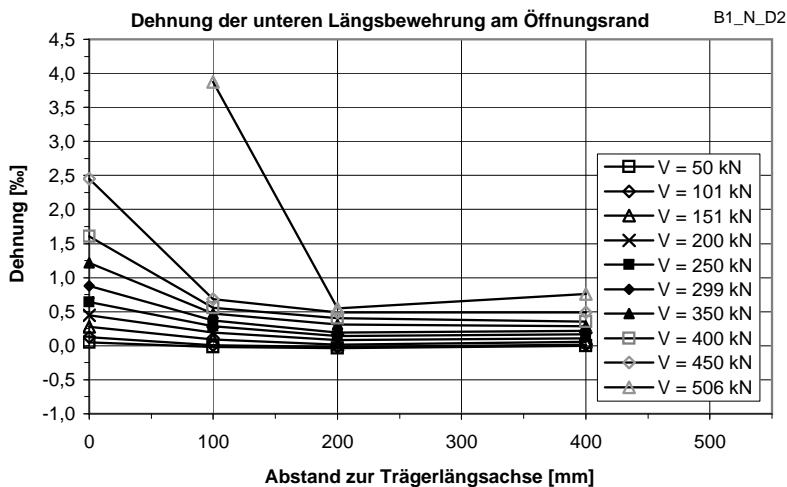
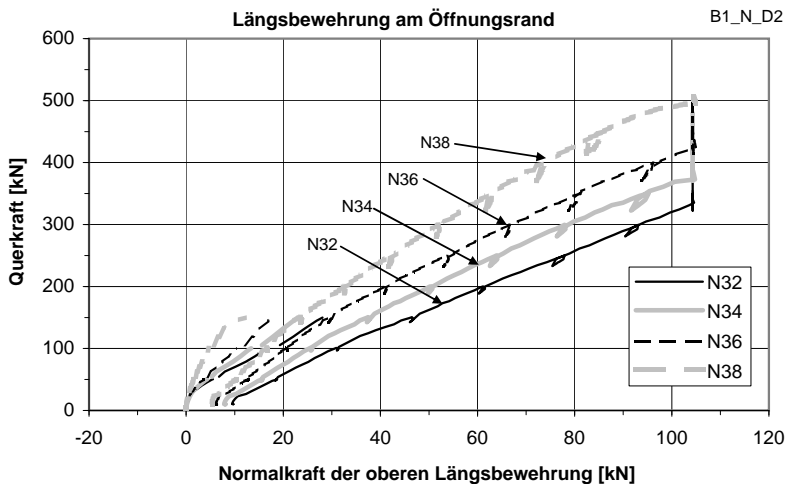


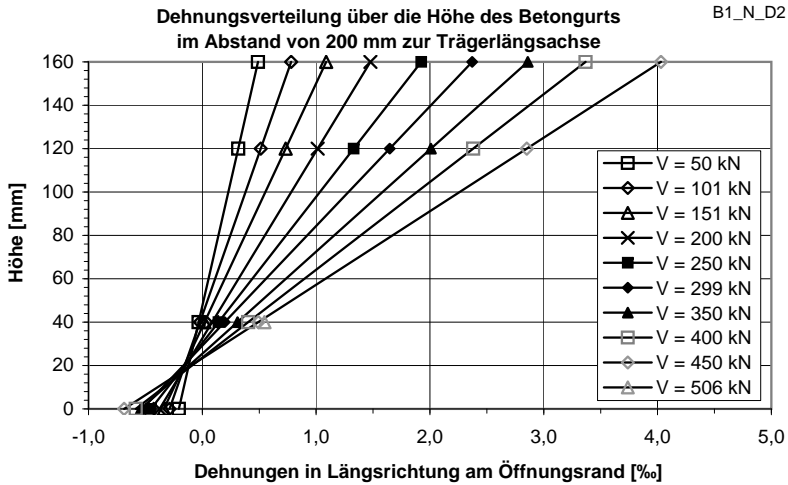
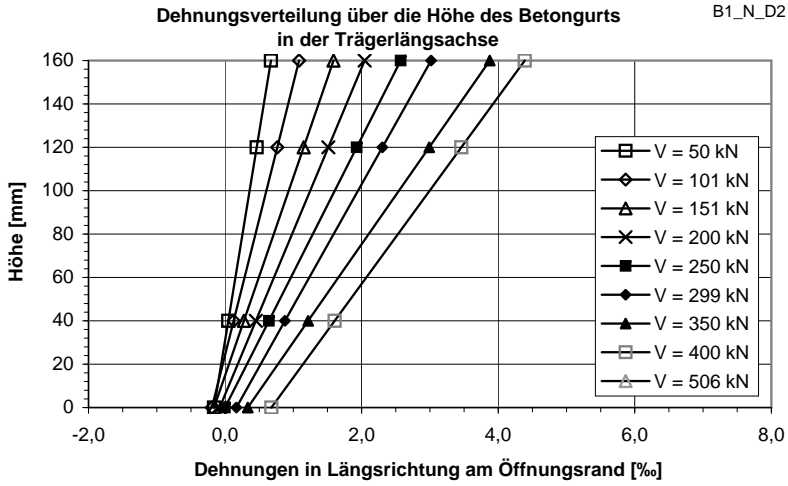


B.6.6. Längsbewehrung

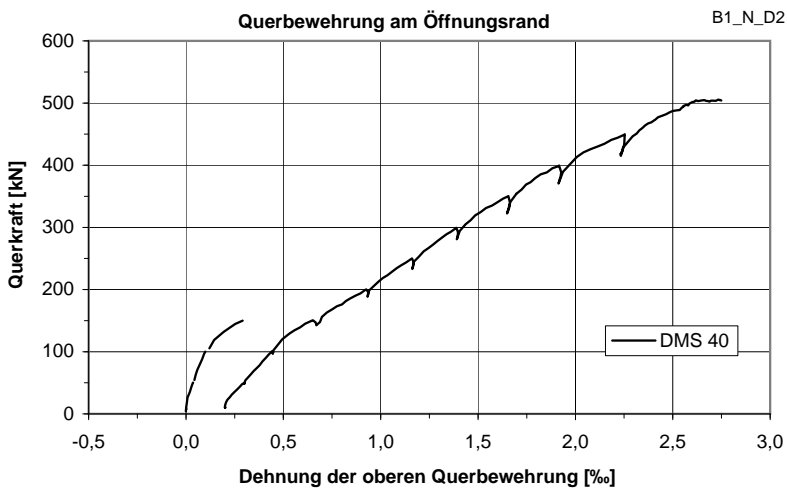
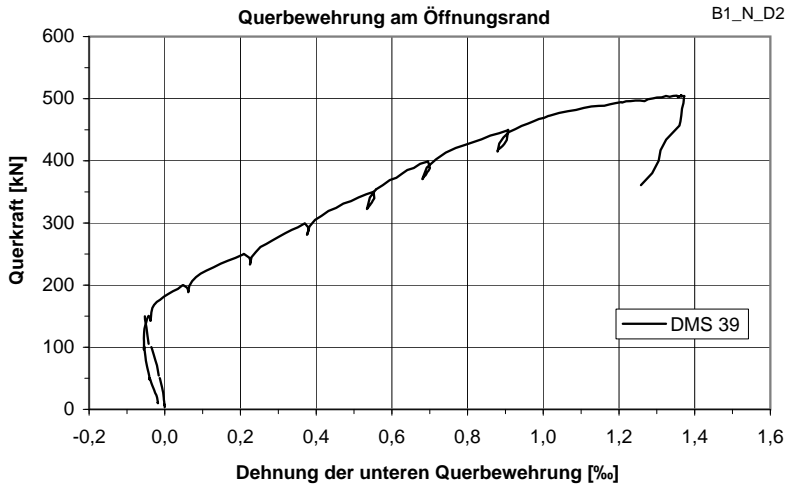


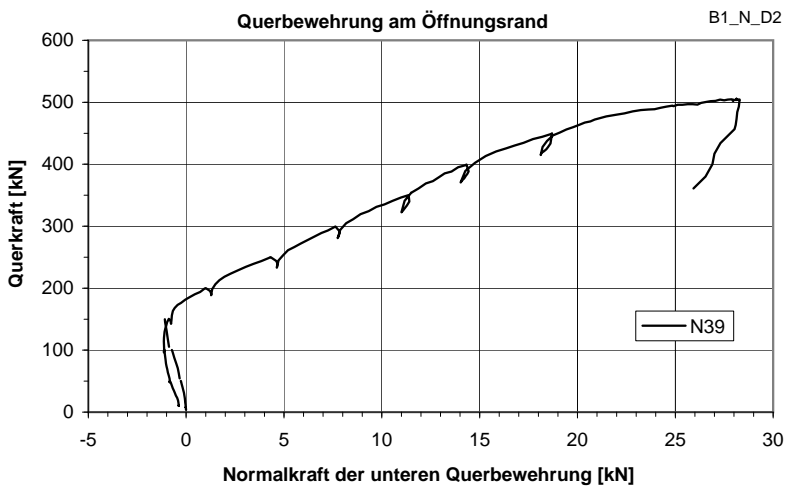
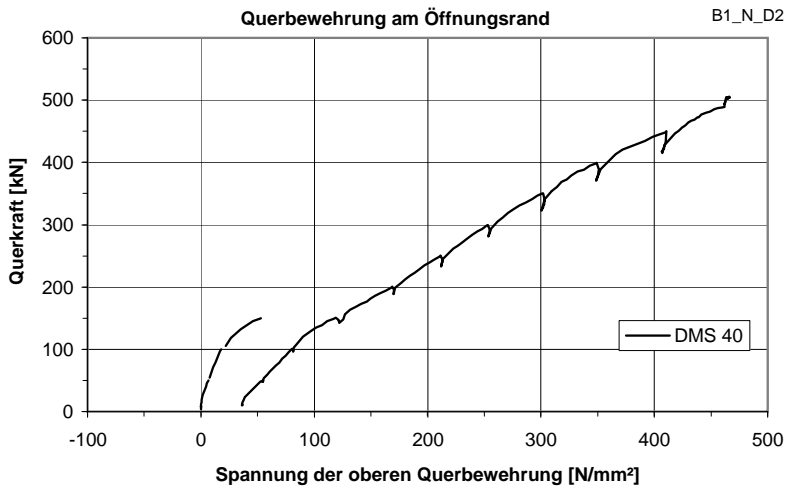
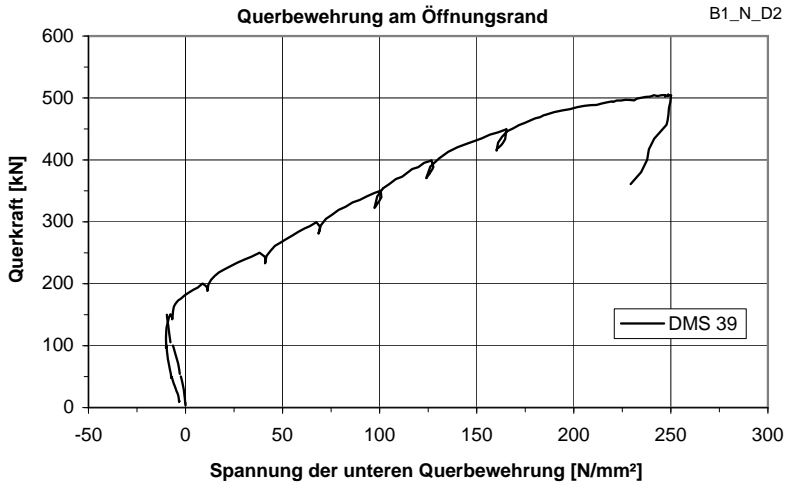


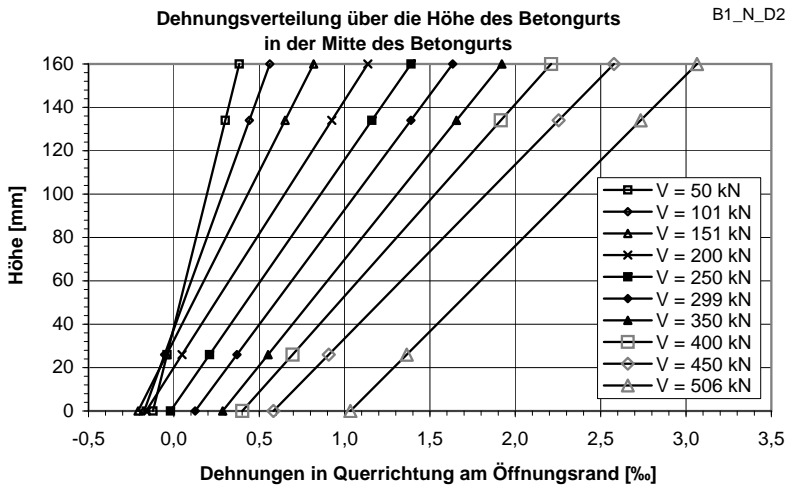
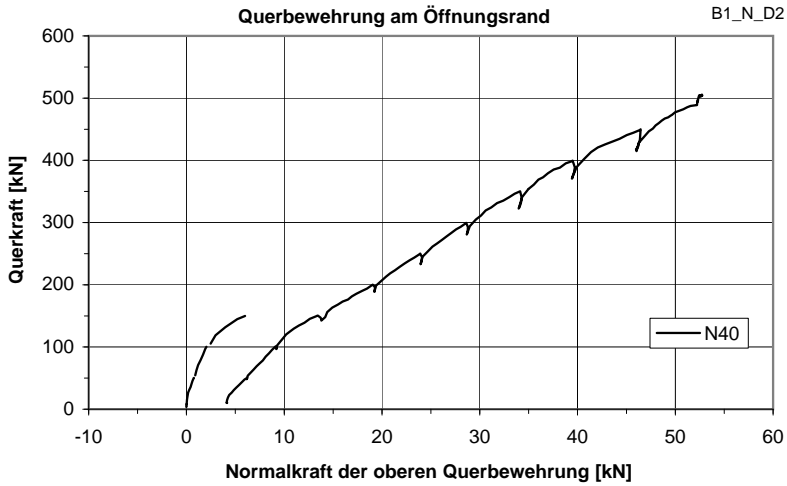




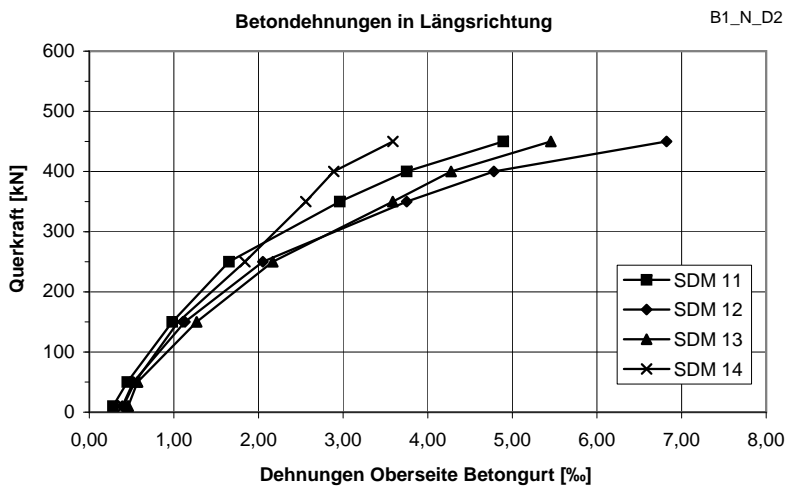
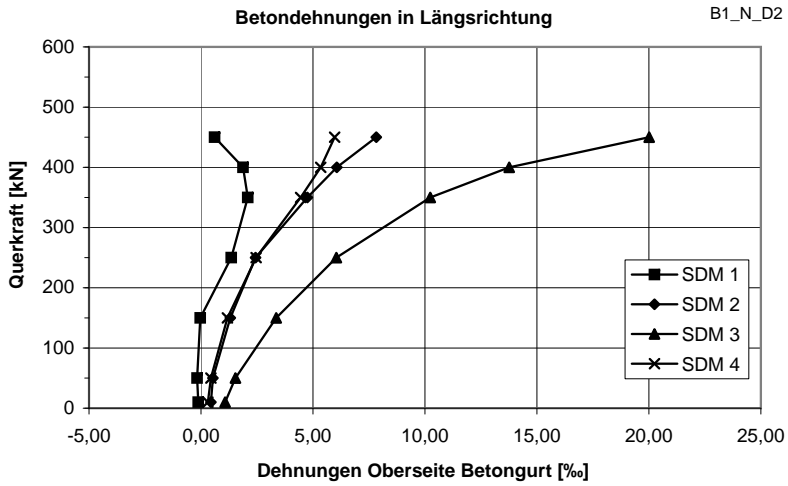
B.6.7. Querbewehrung

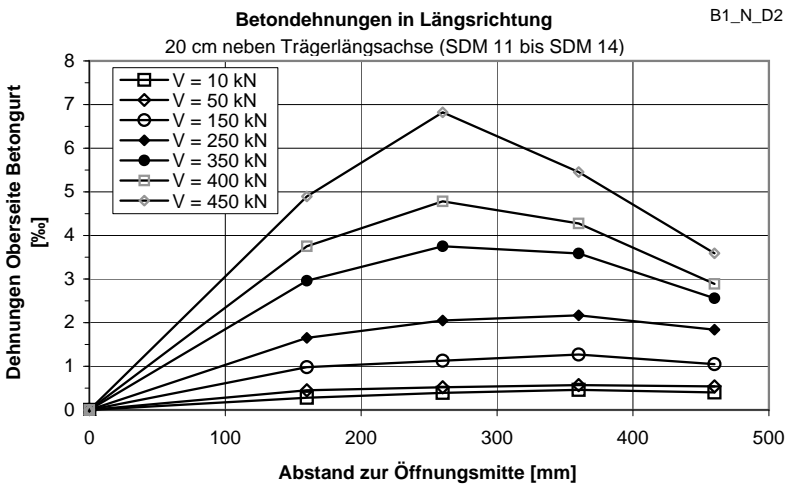
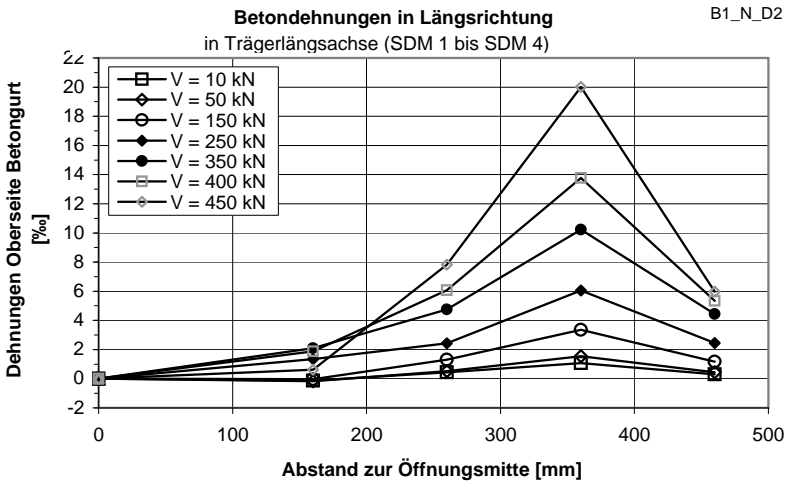
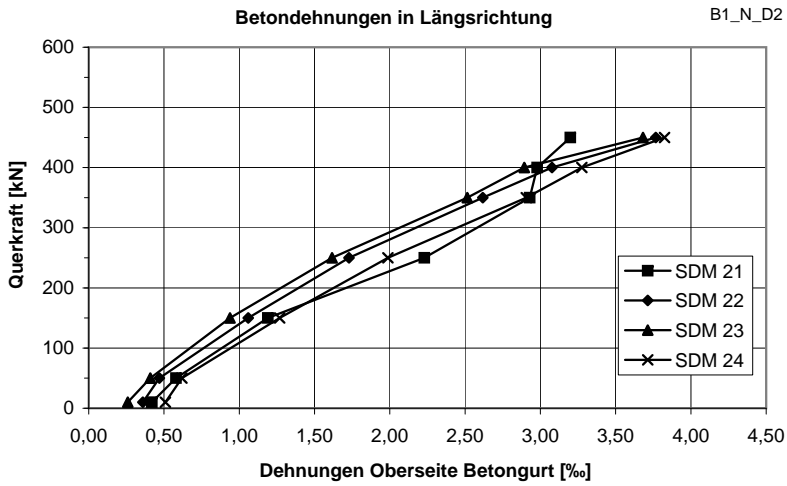


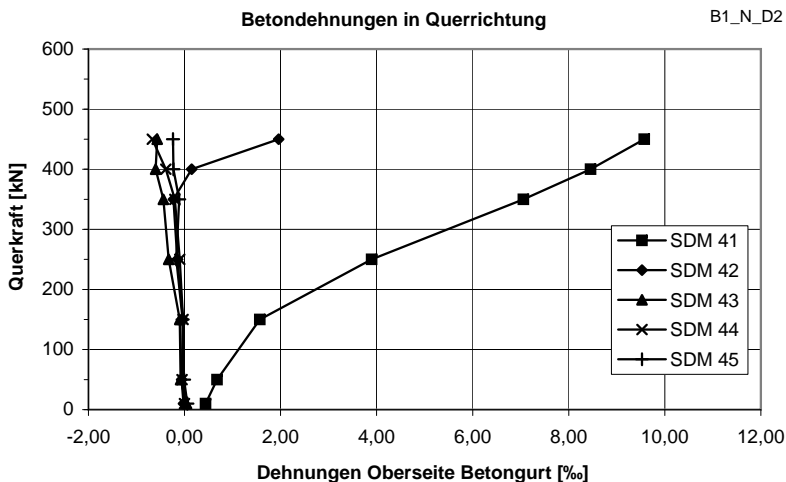
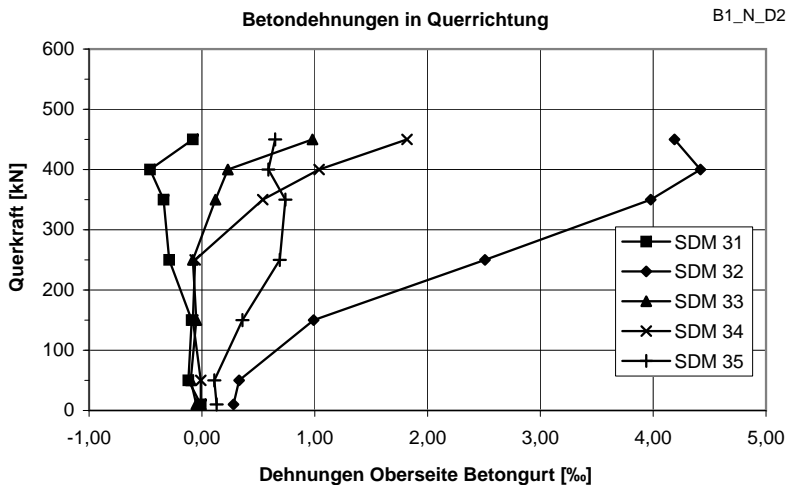
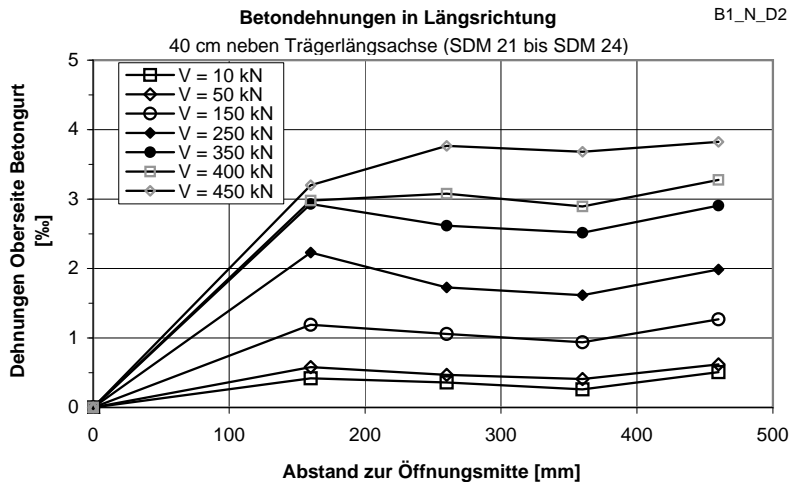


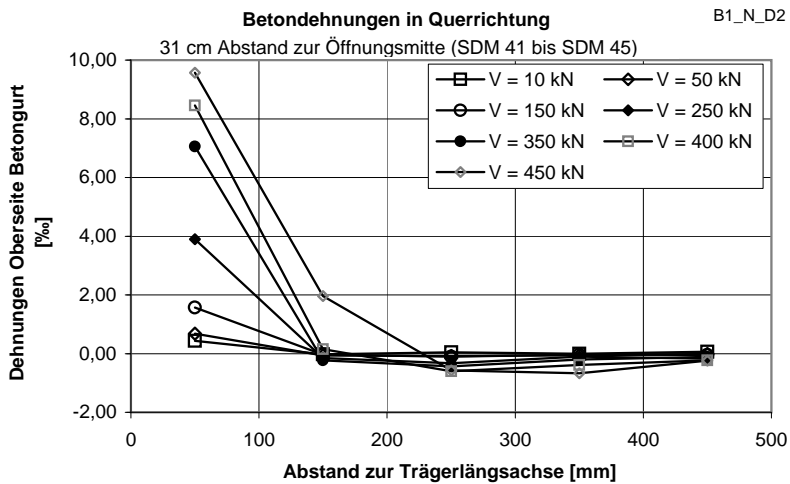
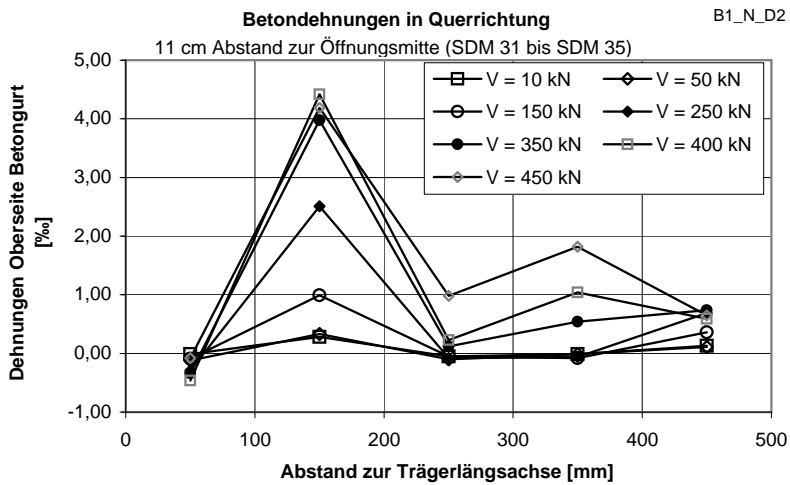
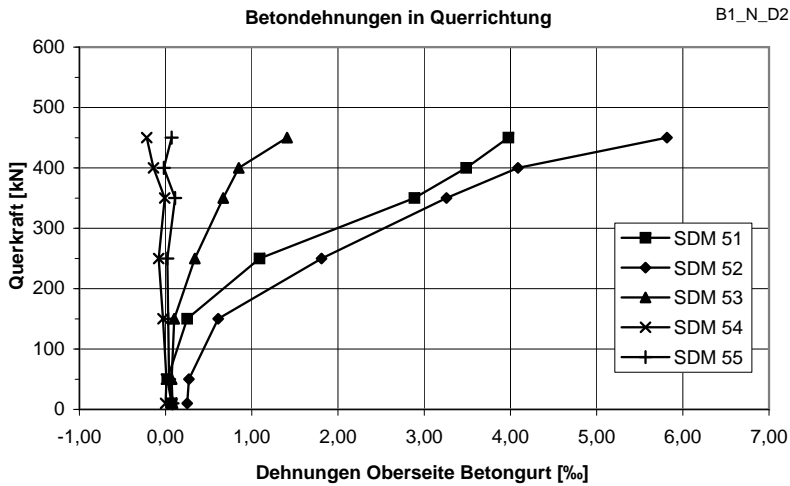


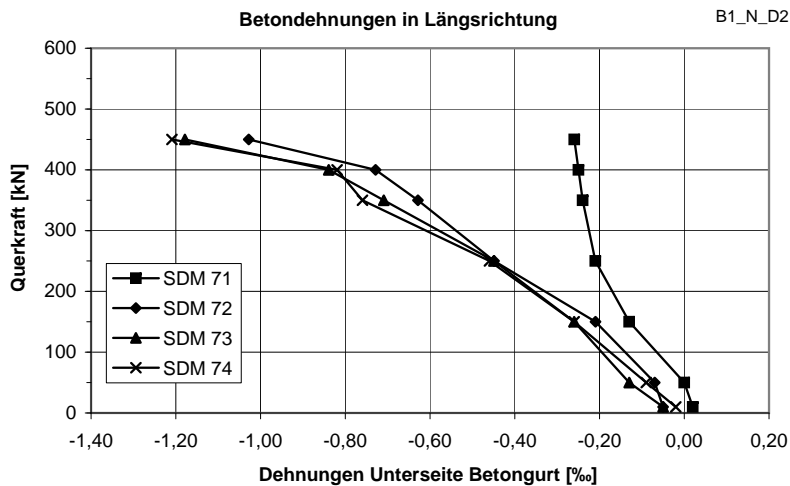
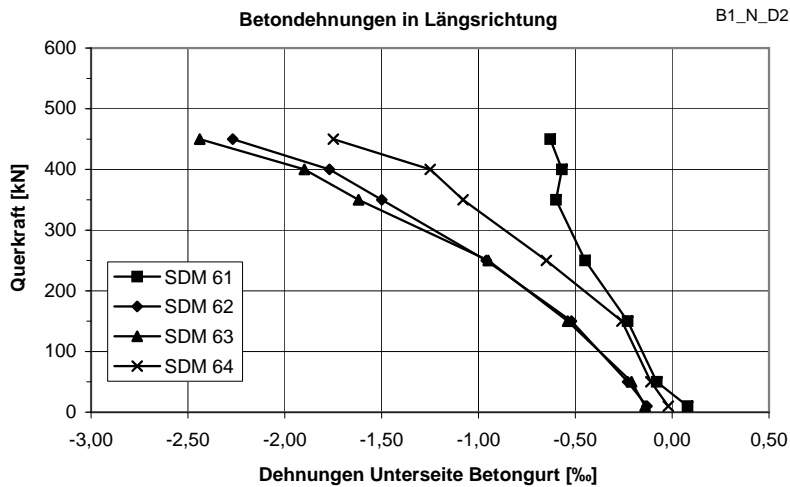
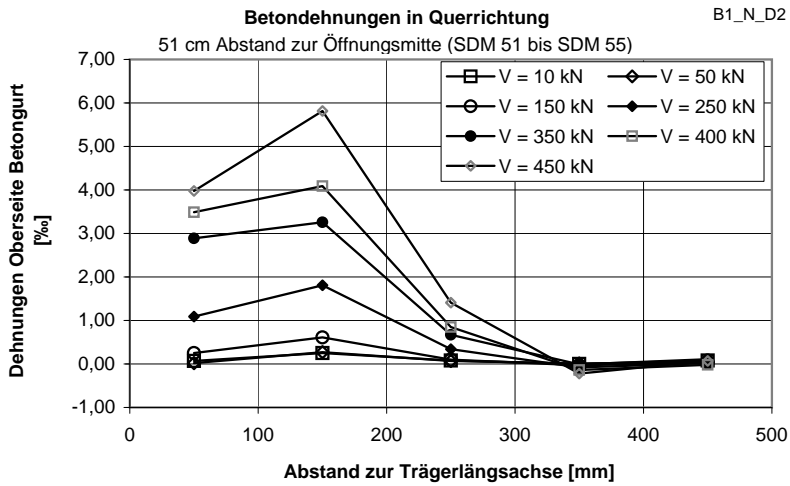
B.6.8. Betondehnungen

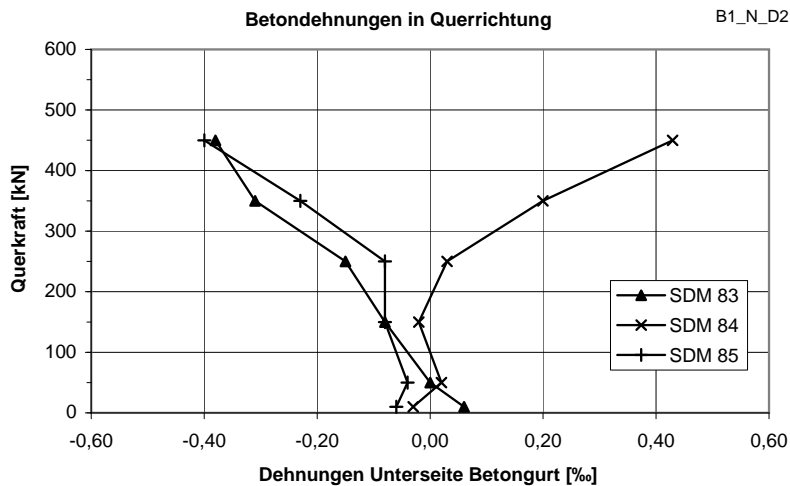
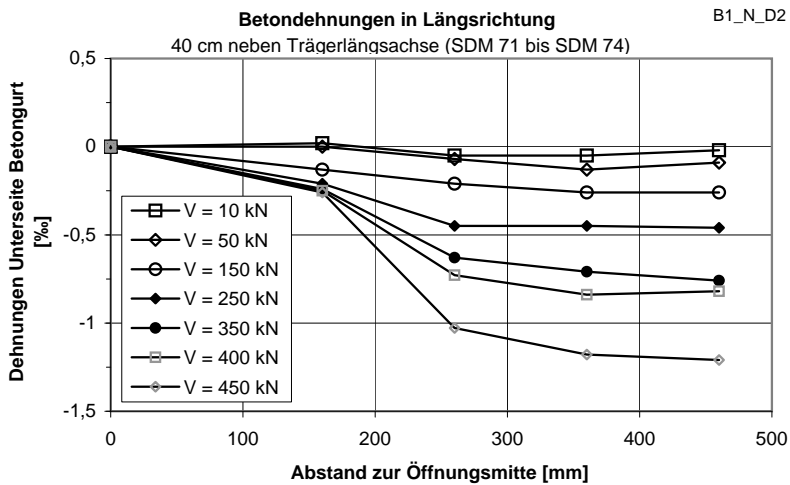
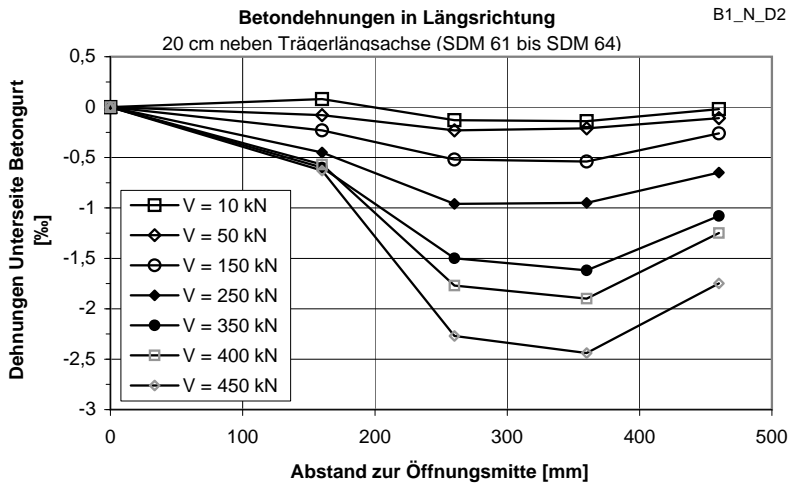


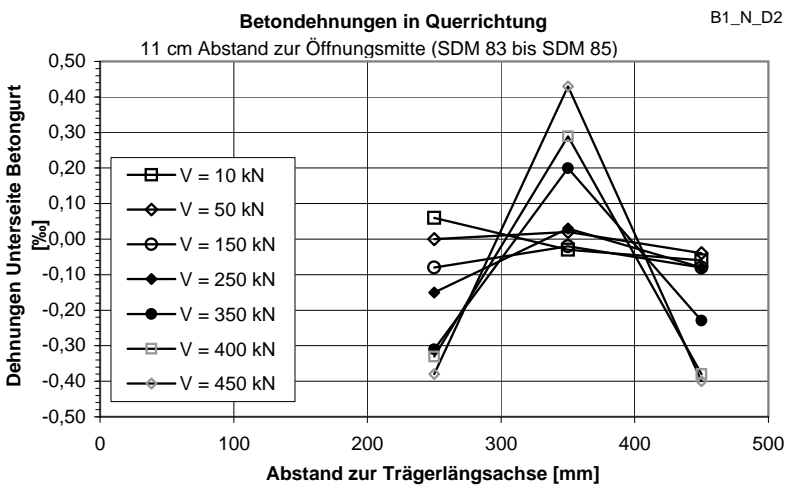
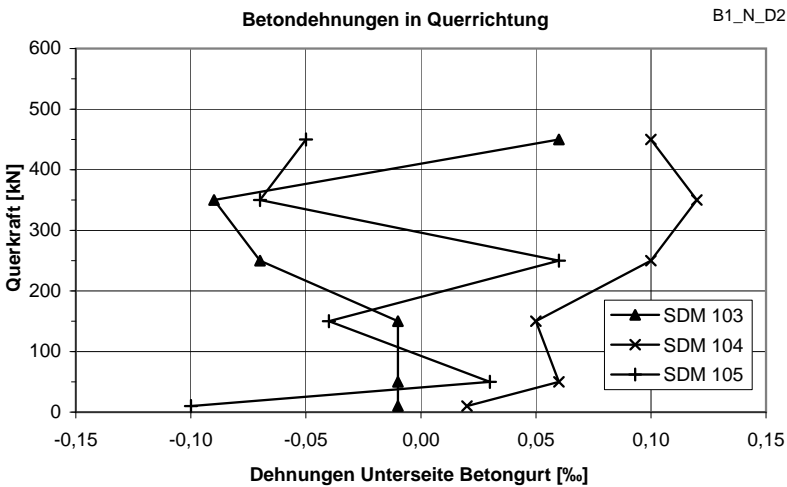
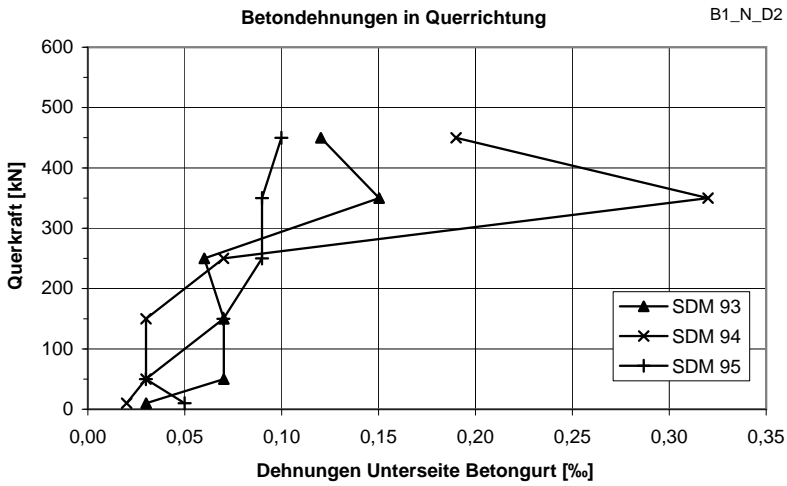


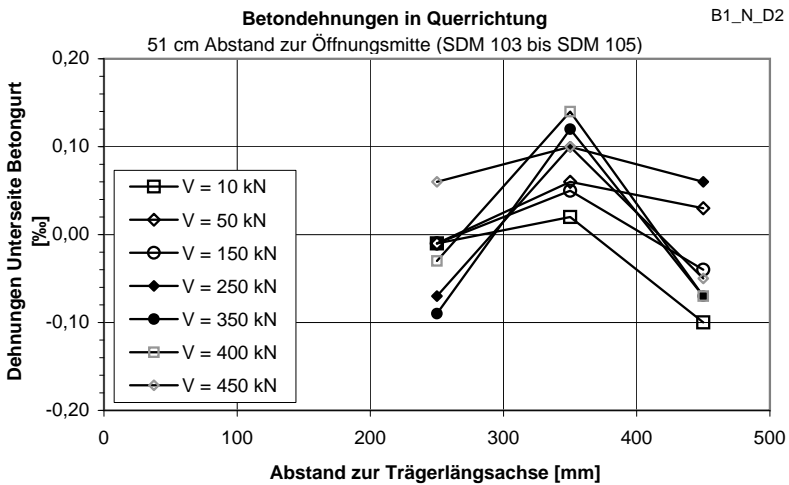
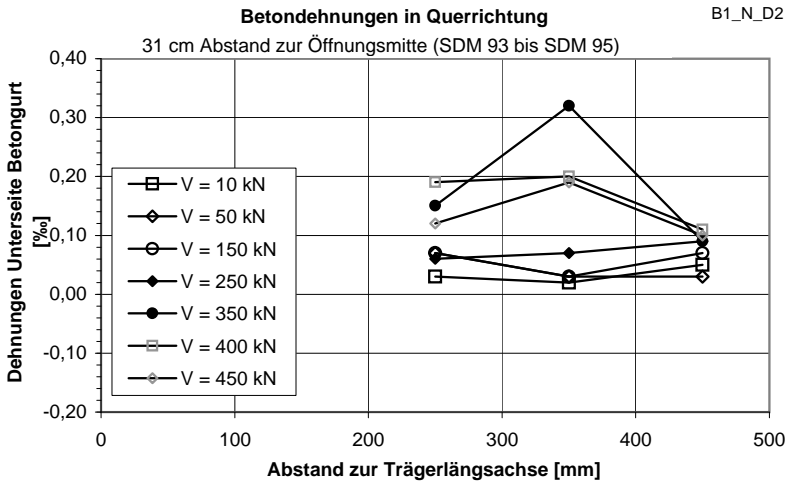






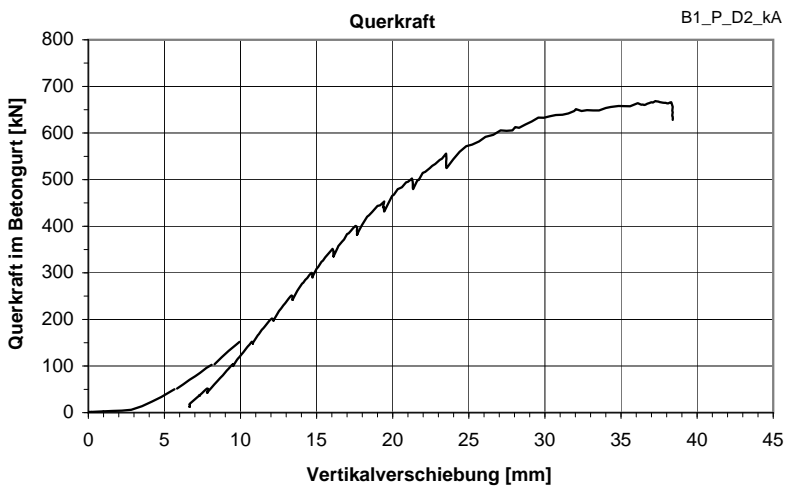
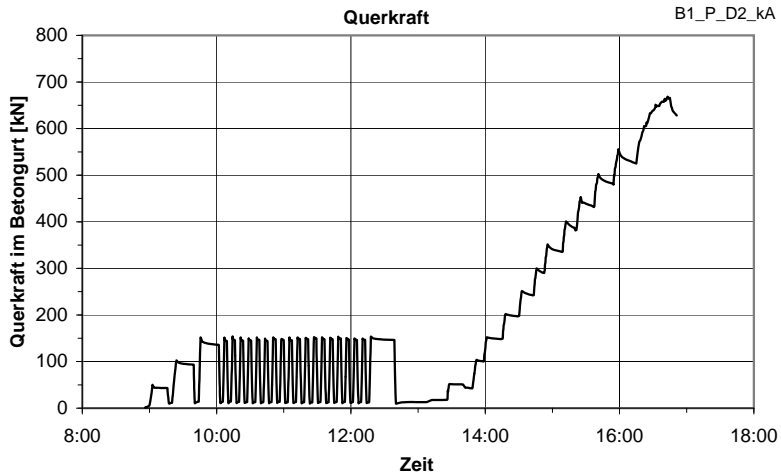


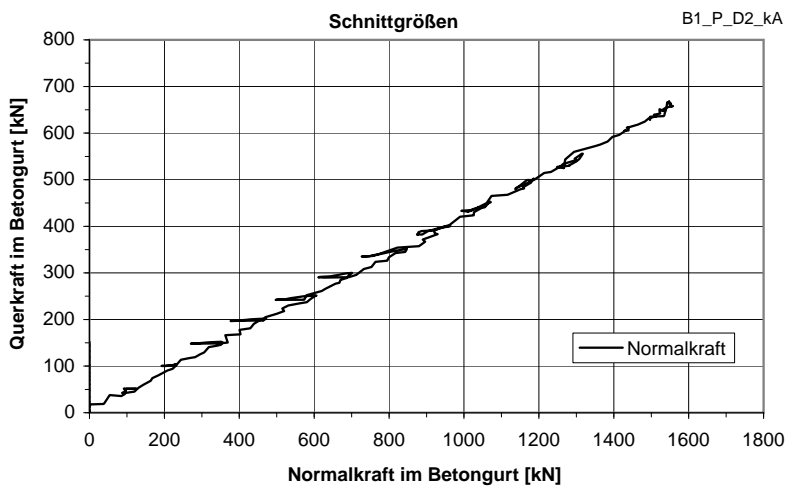
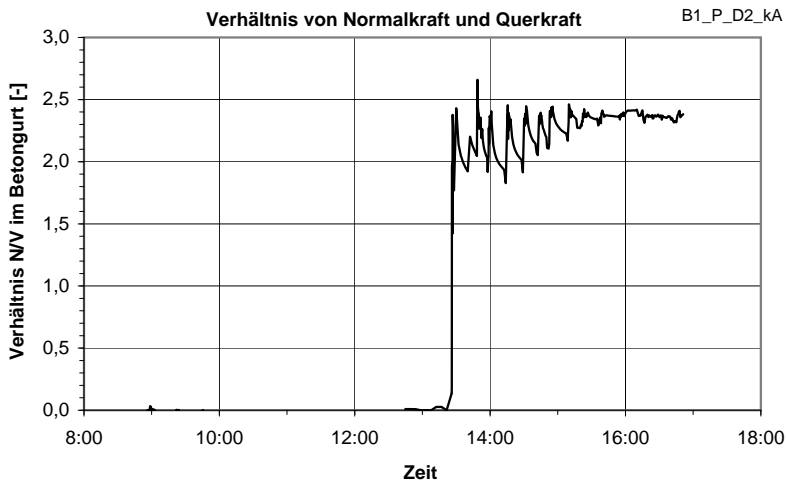
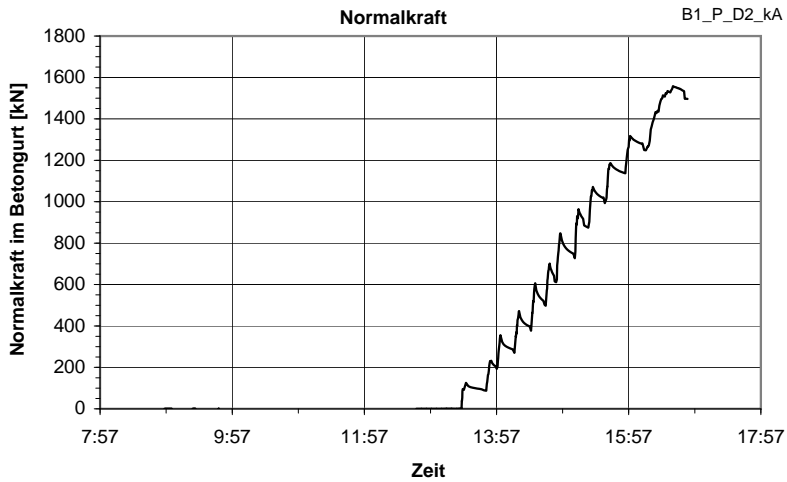


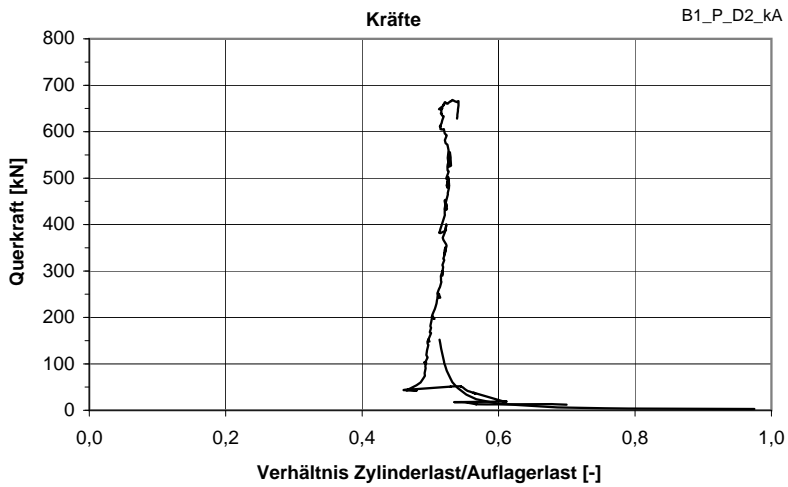
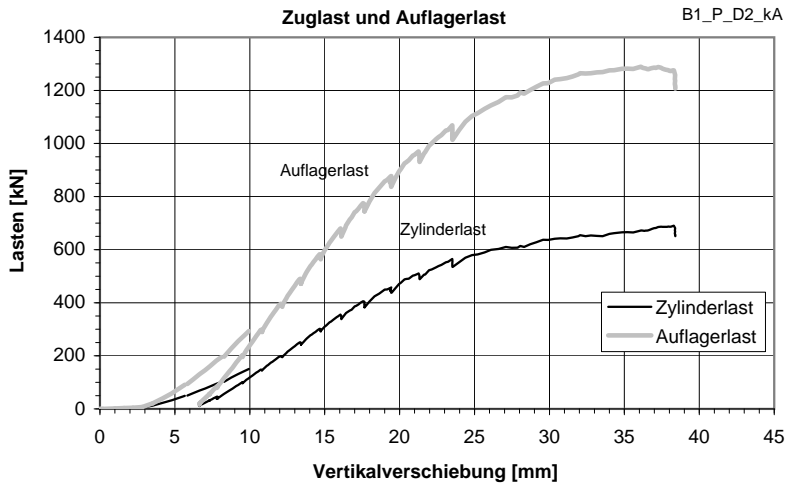


B.7. Versuch B1_P_D2_kA

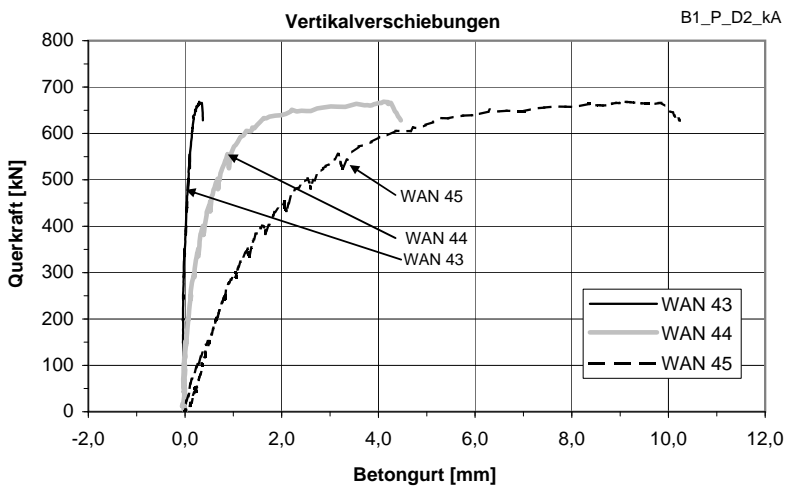
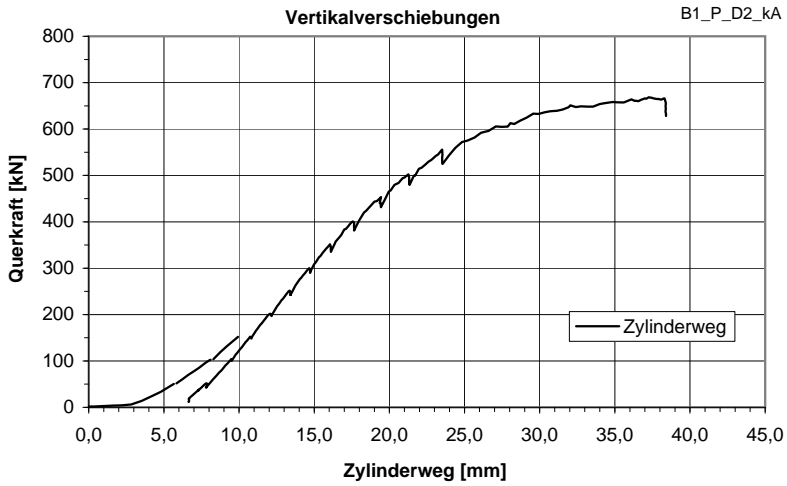
B.7.1. Kräfte

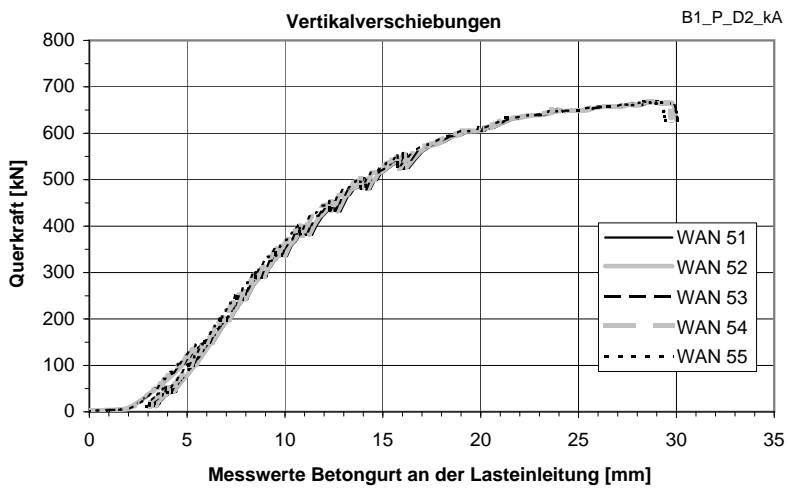
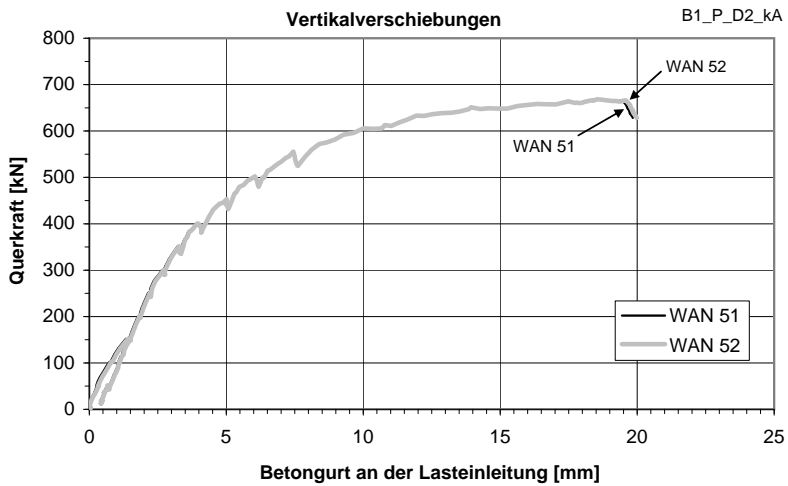
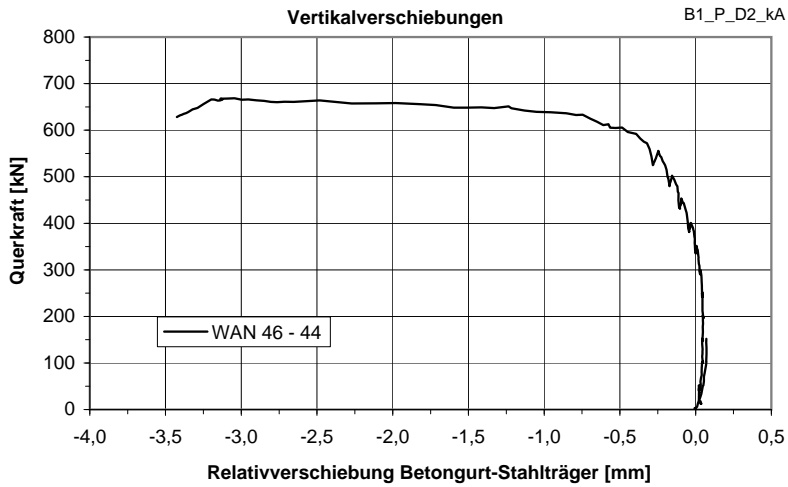




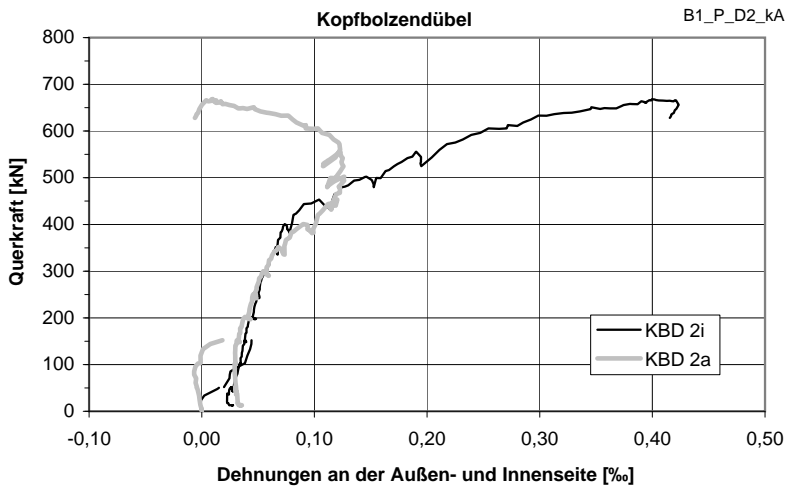
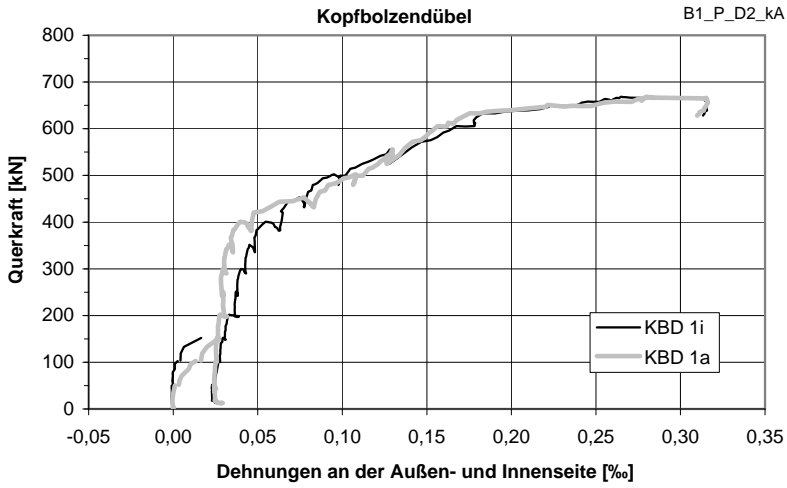


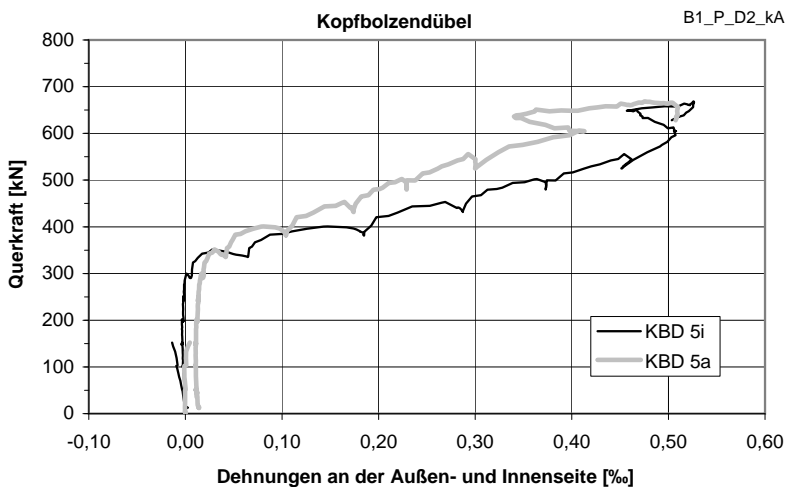
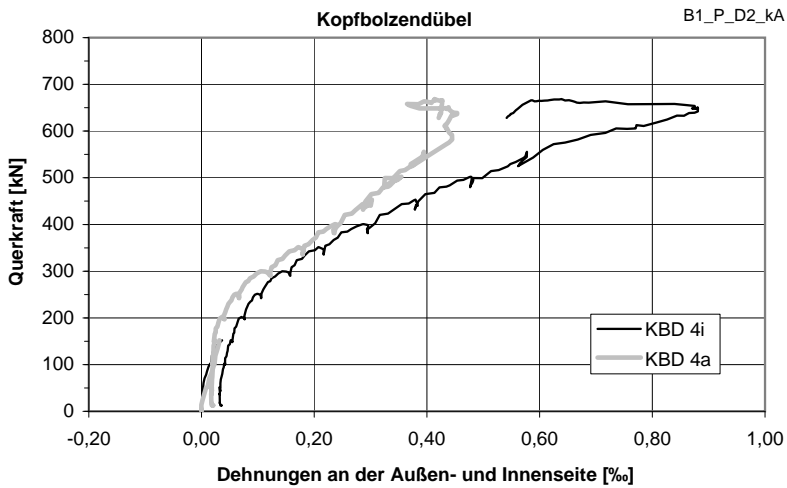
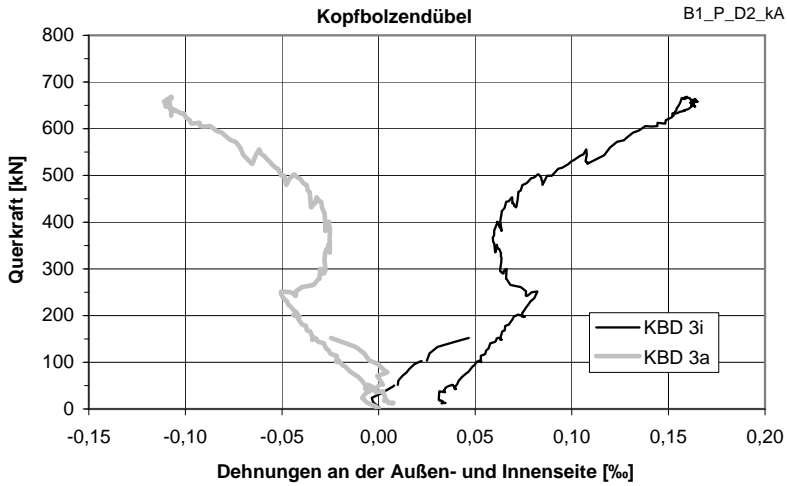
B.7.2. Verformungen

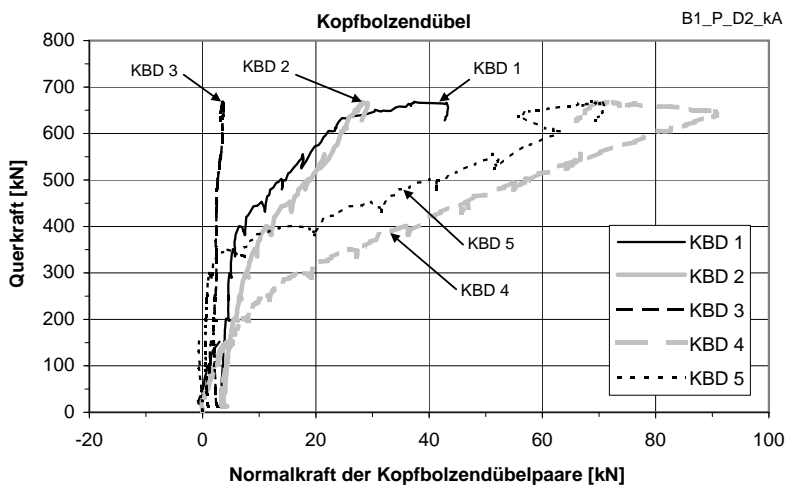
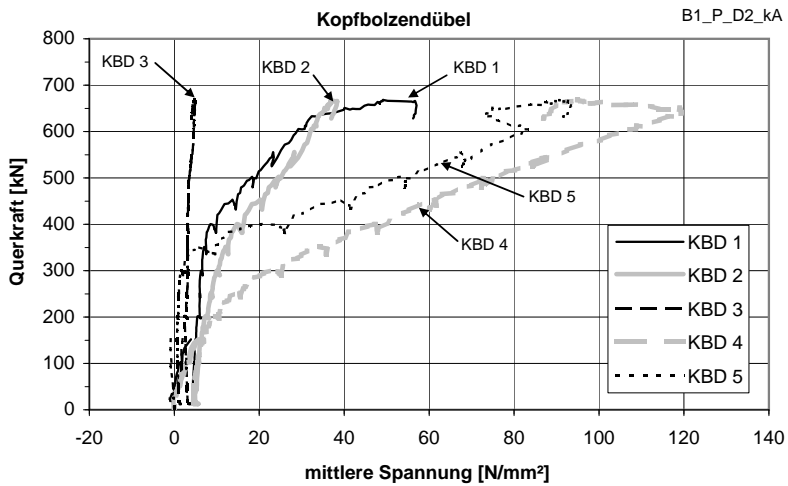
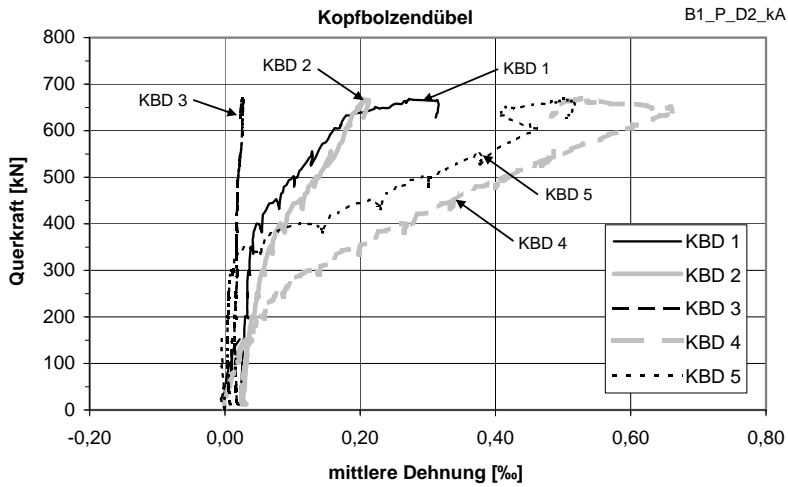




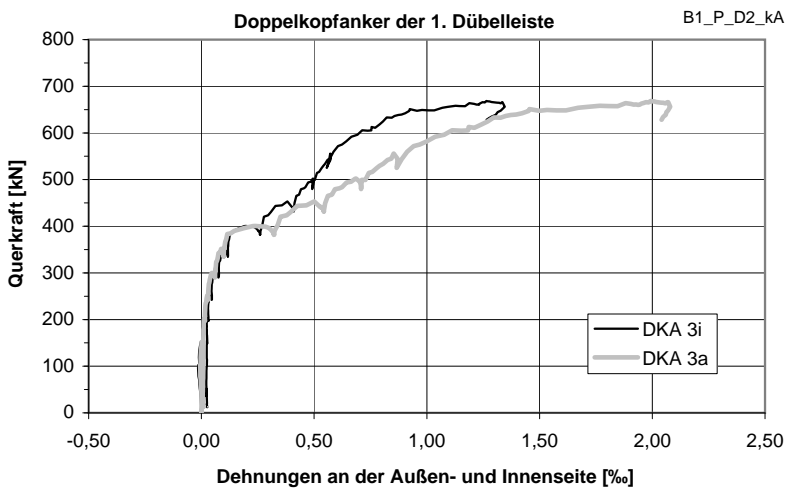
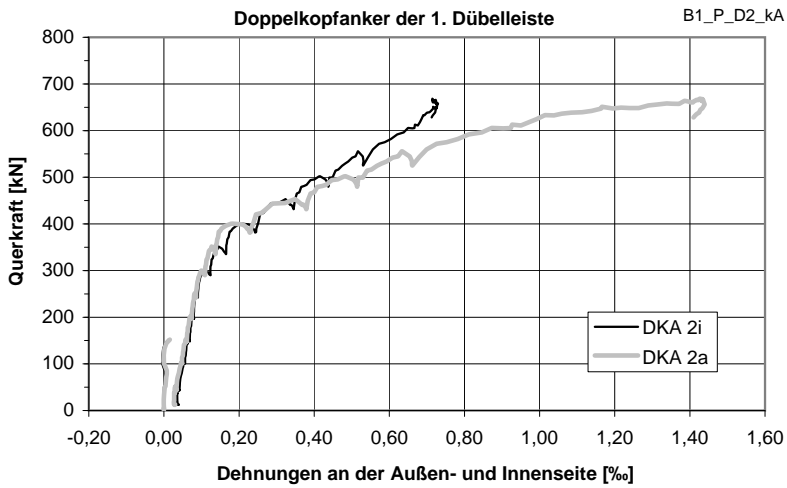
B.7.3. Kopfbolzendübel

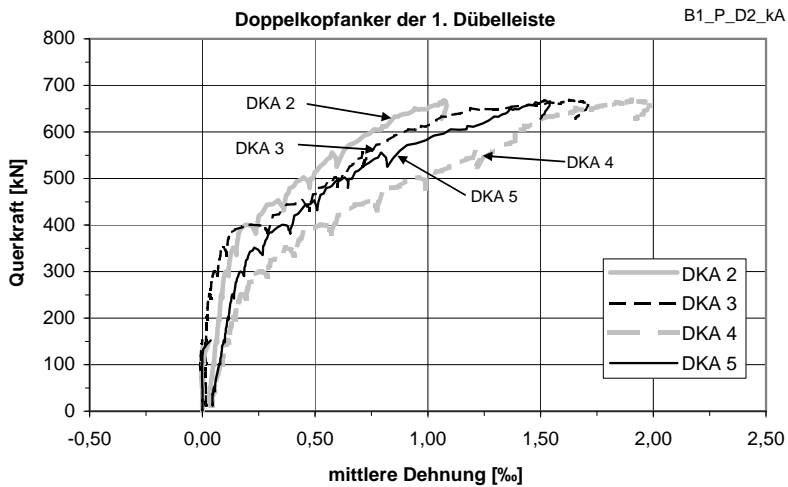
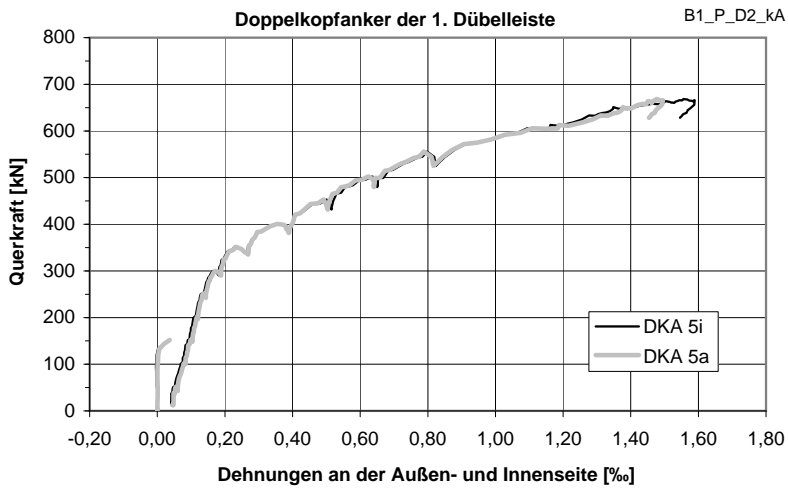
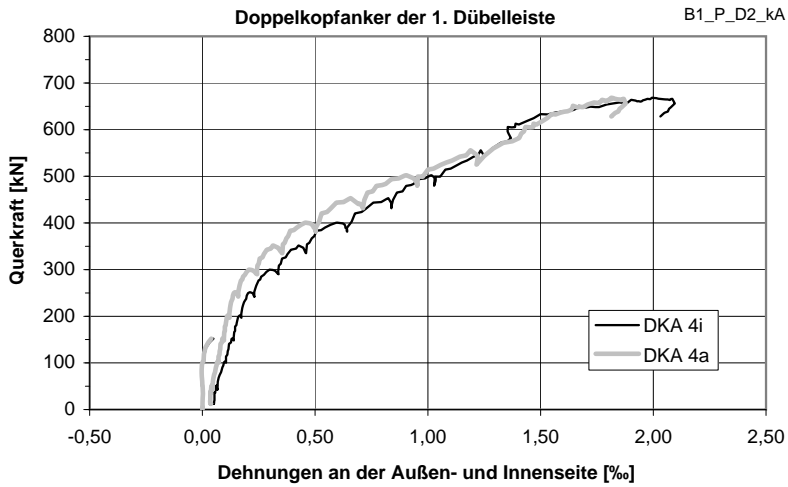


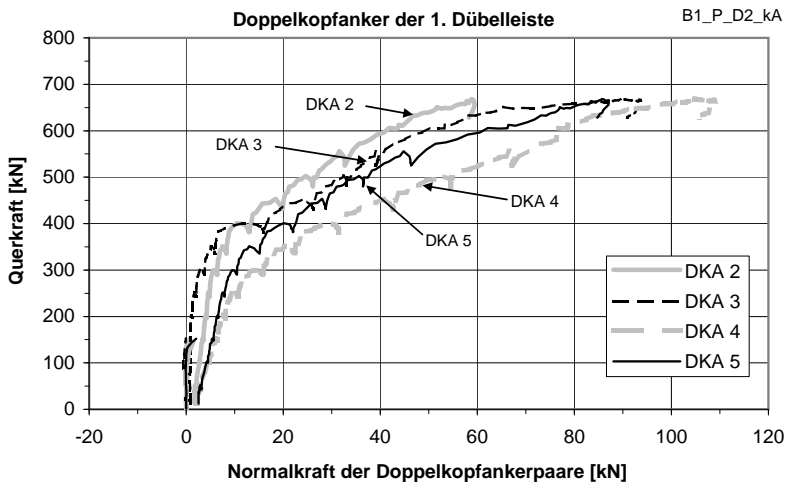
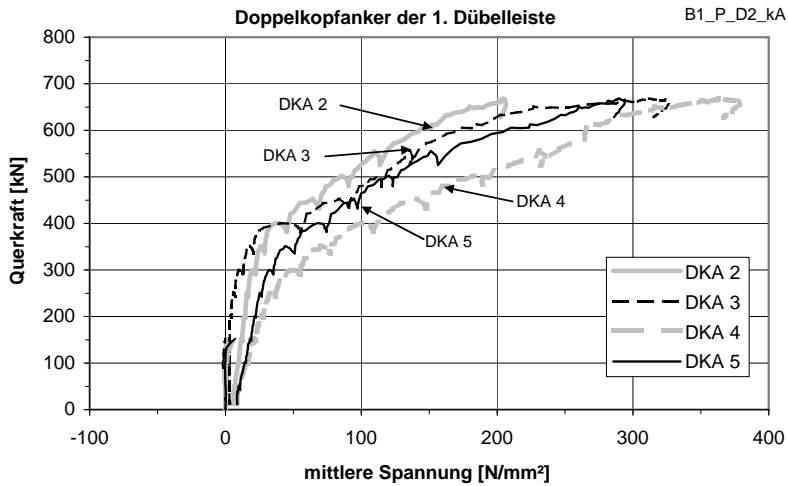




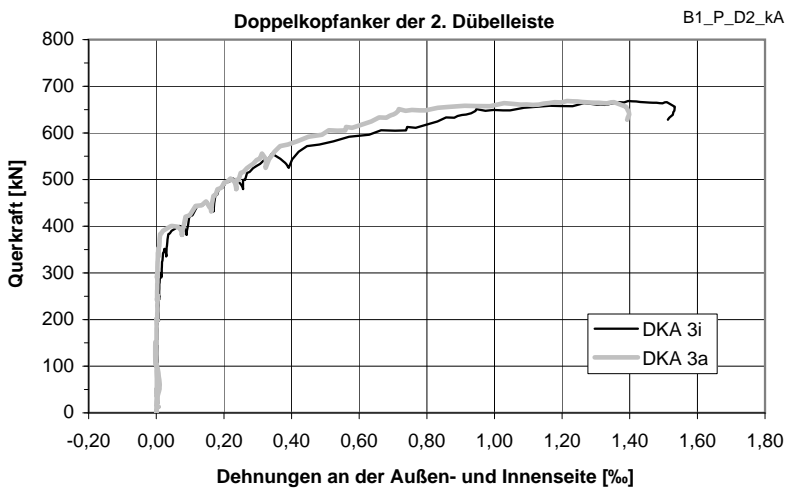
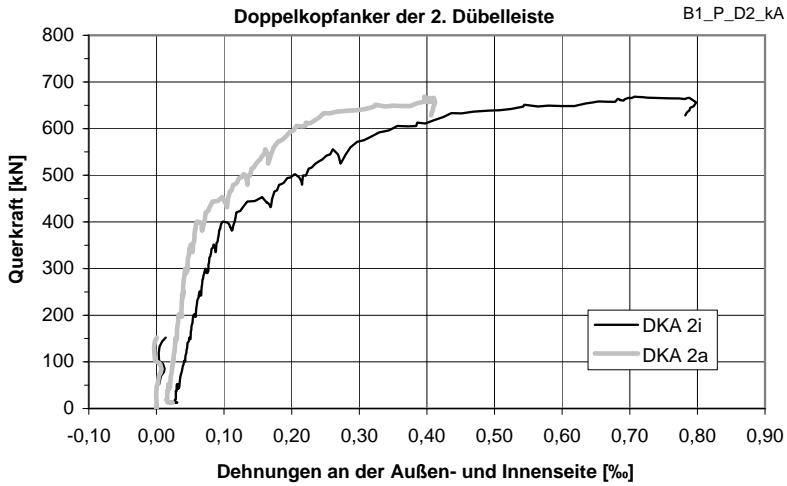
B.7.4. Doppelkopfkanker der ersten Dübelleiste

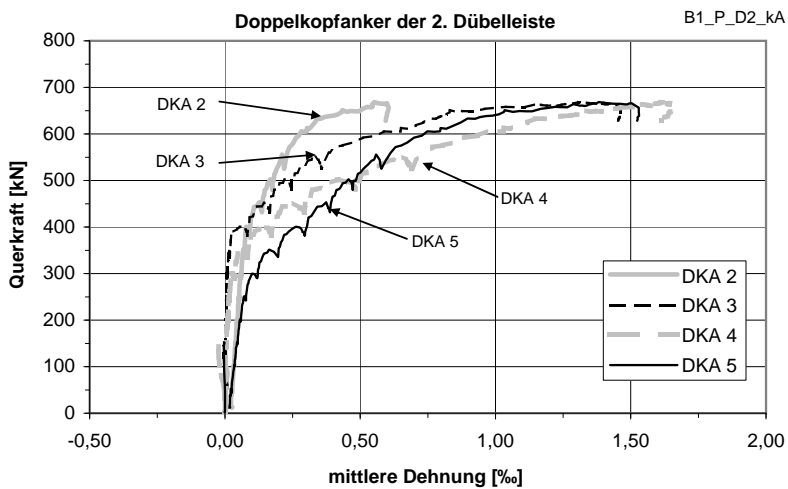
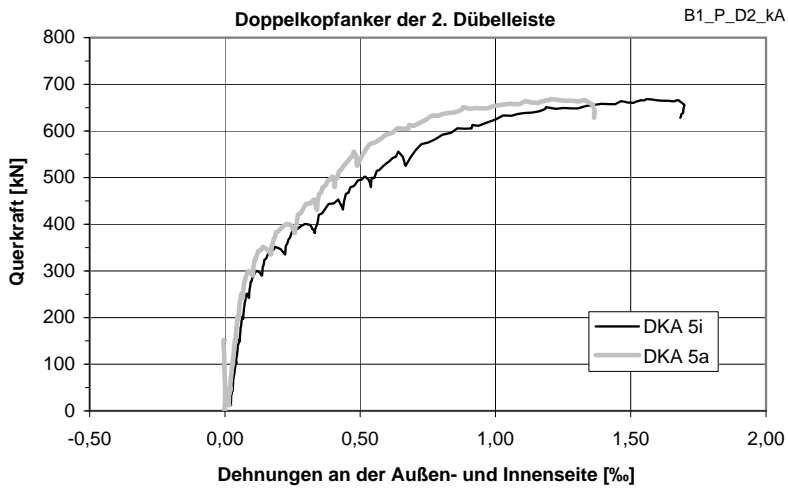
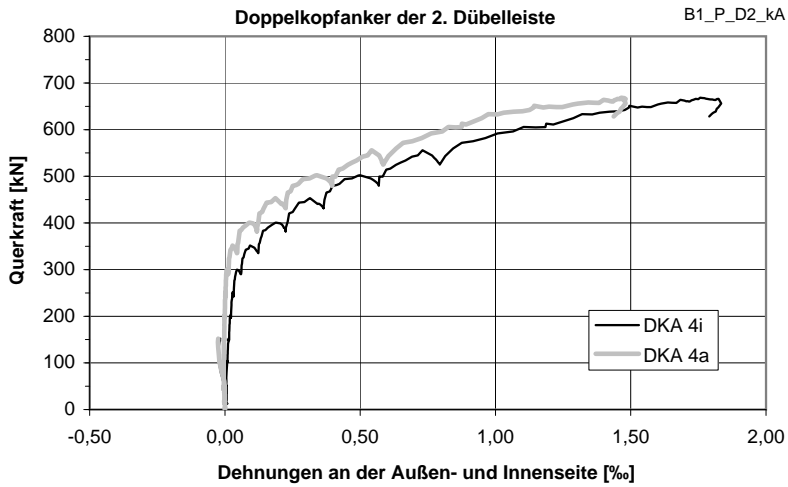


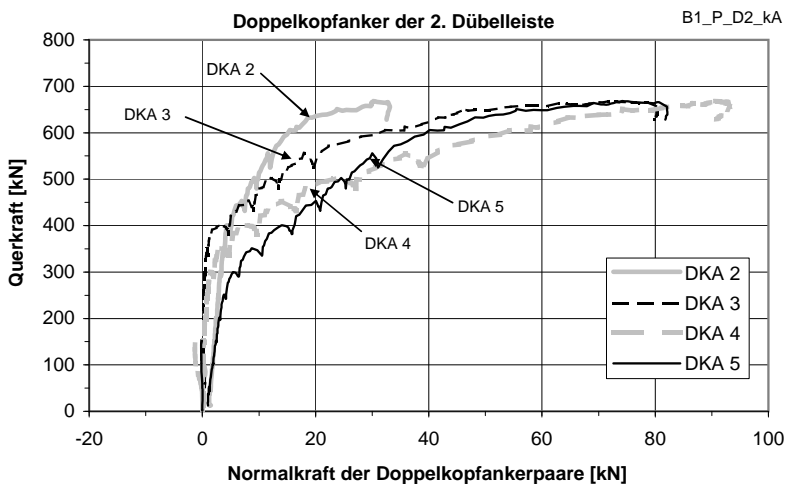
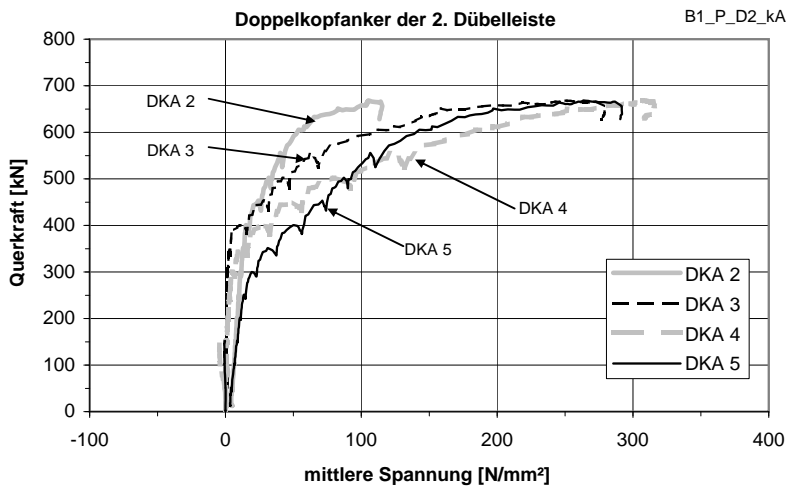




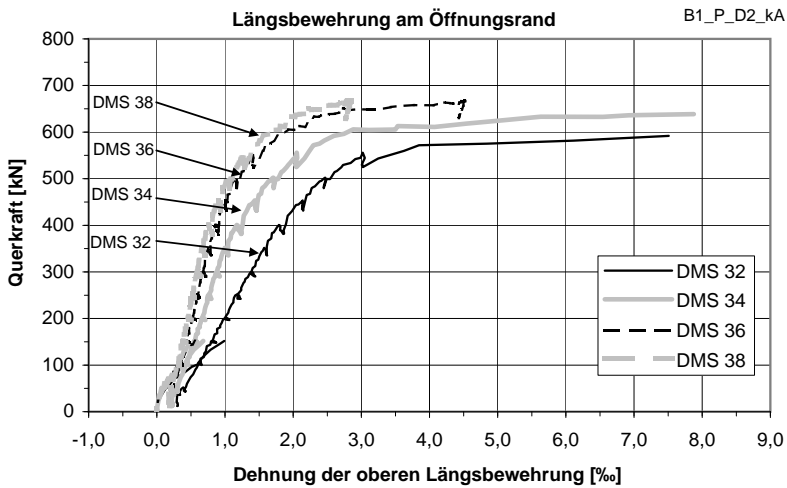
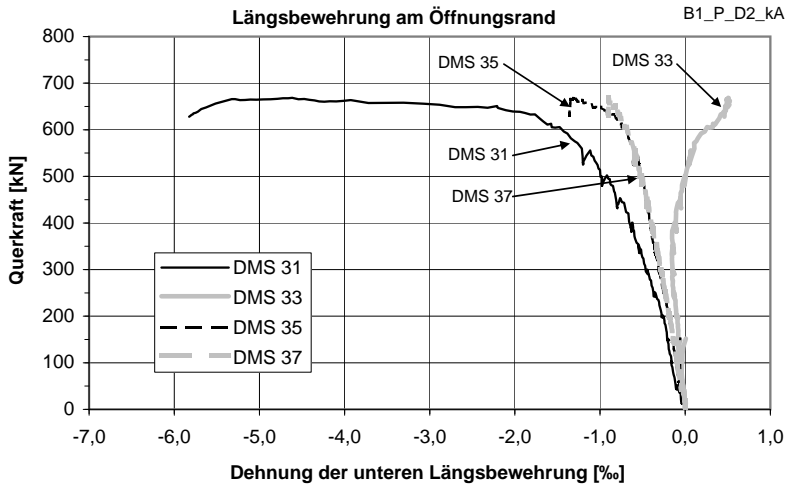
B.7.5. Doppelkopfanker der zweiten Dübelleiste

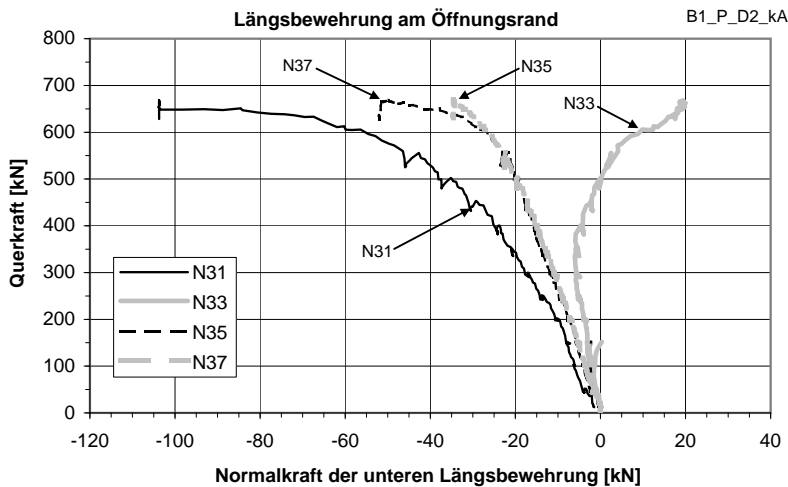
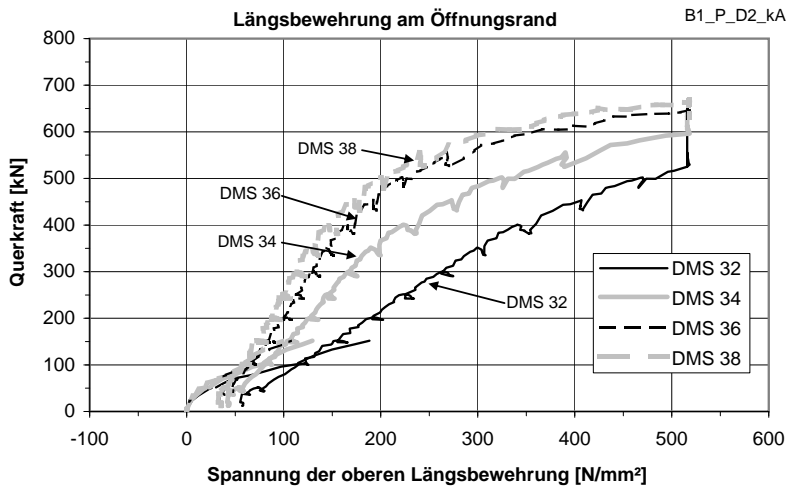
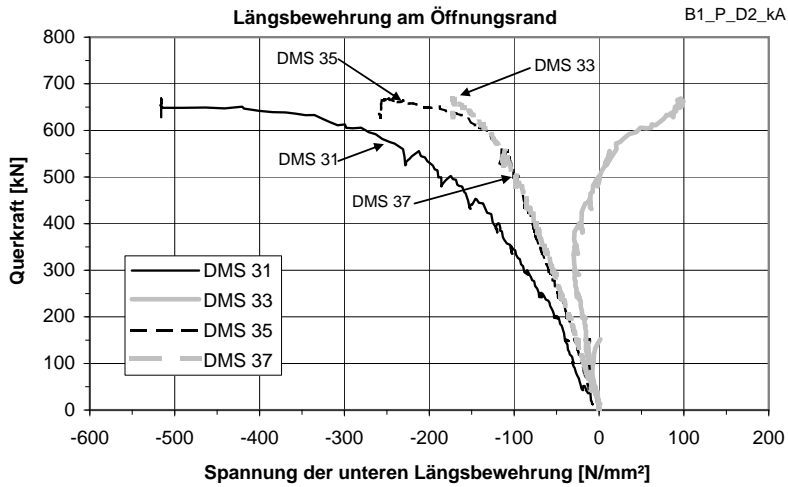


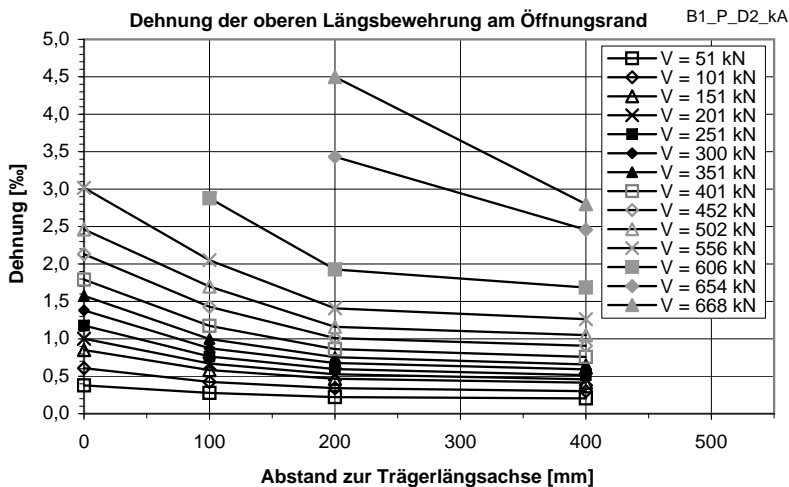
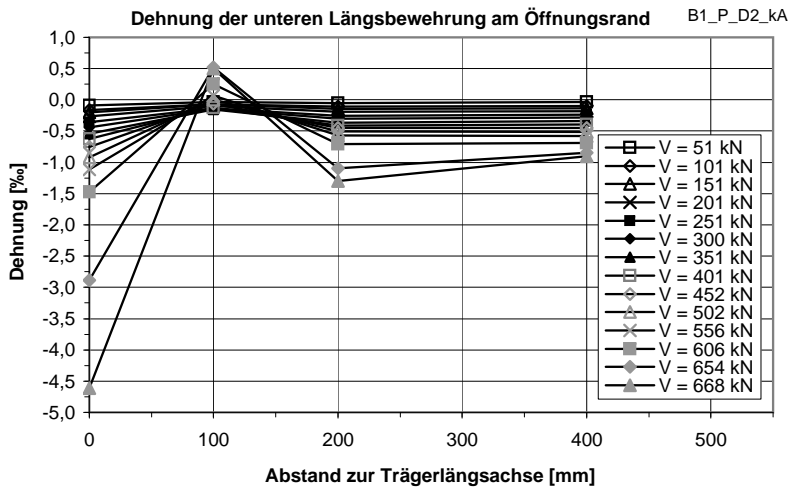
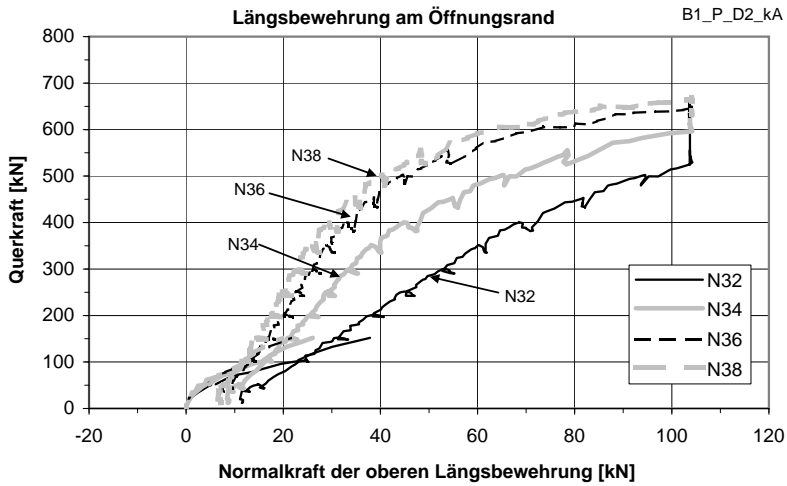


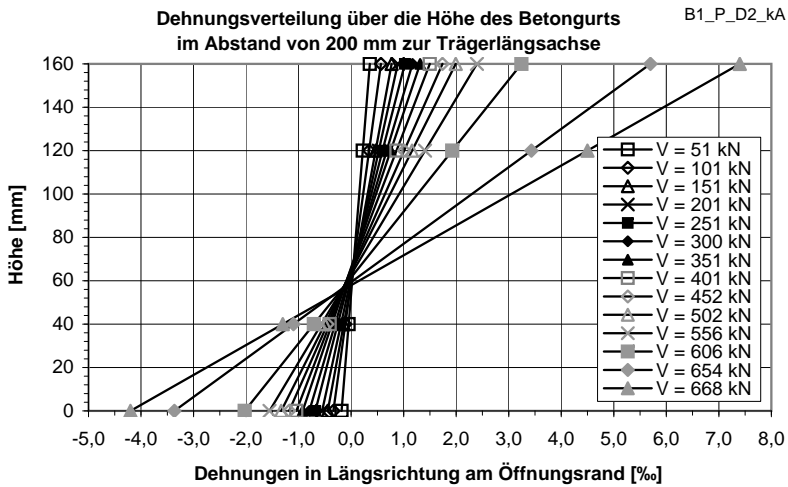
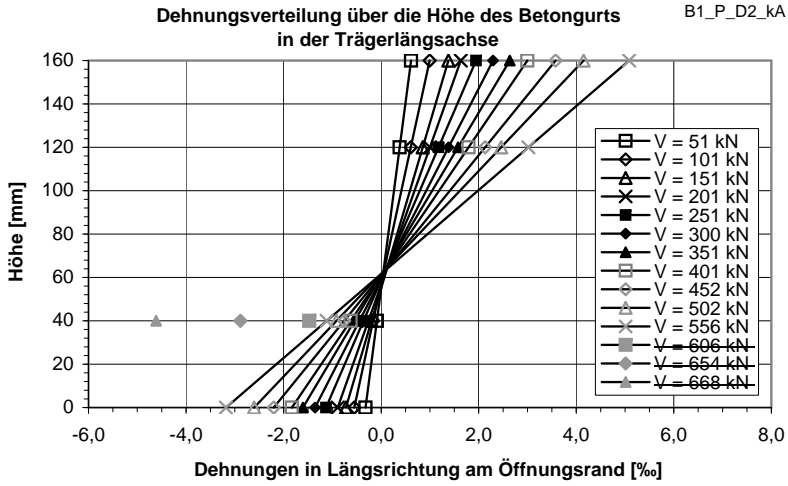


B.7.6. Längsbewehrung

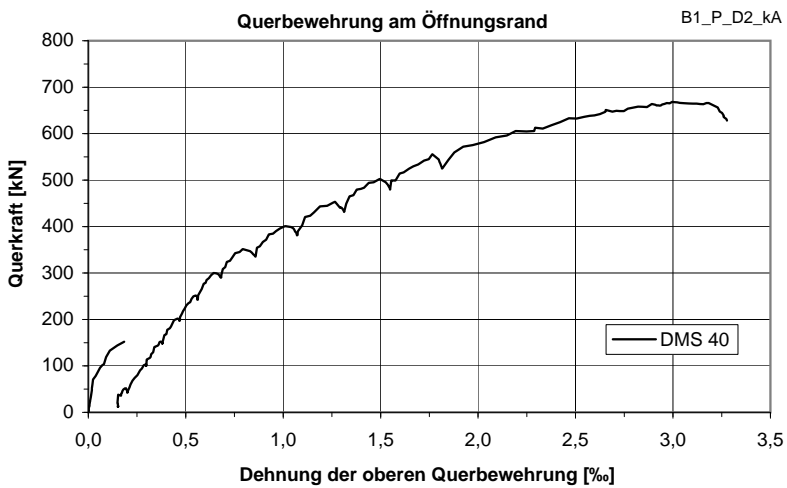
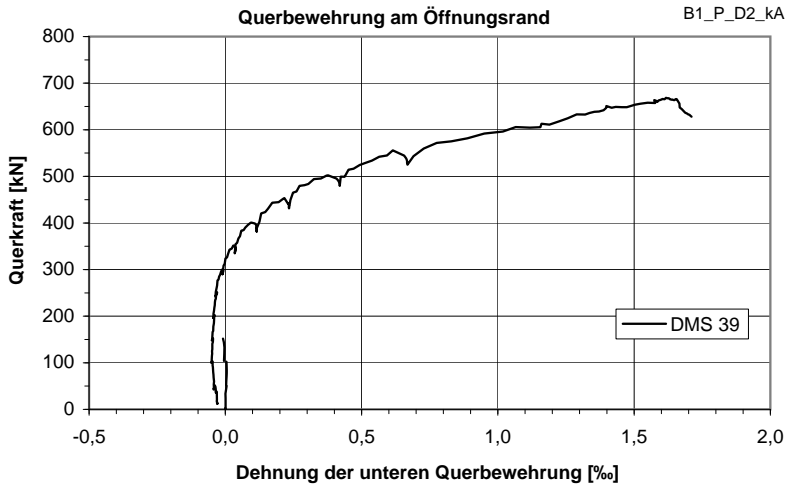


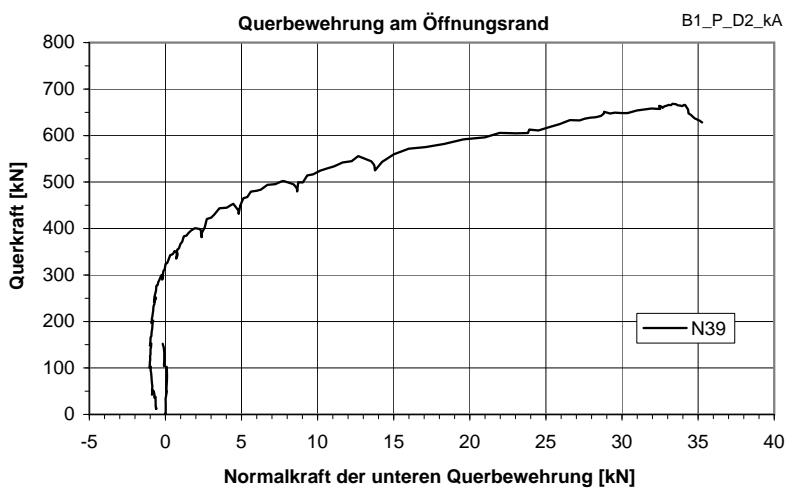
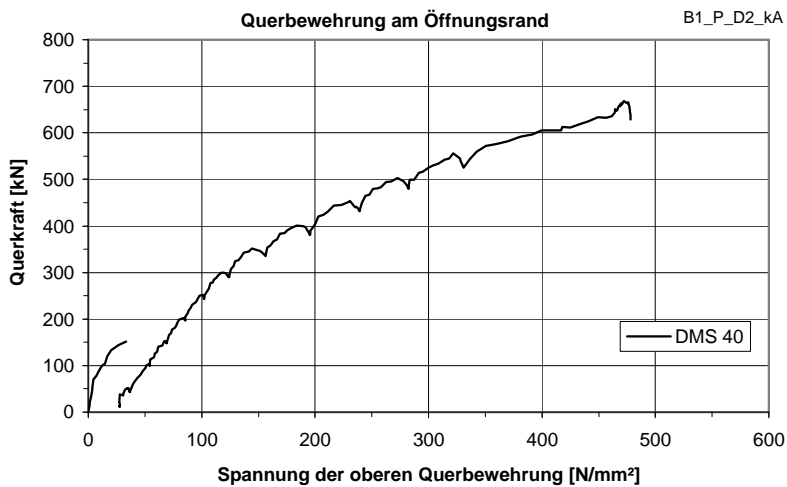
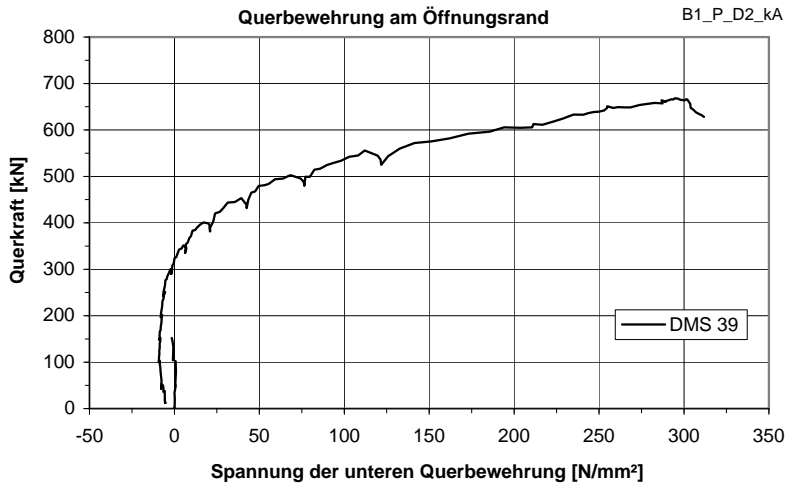


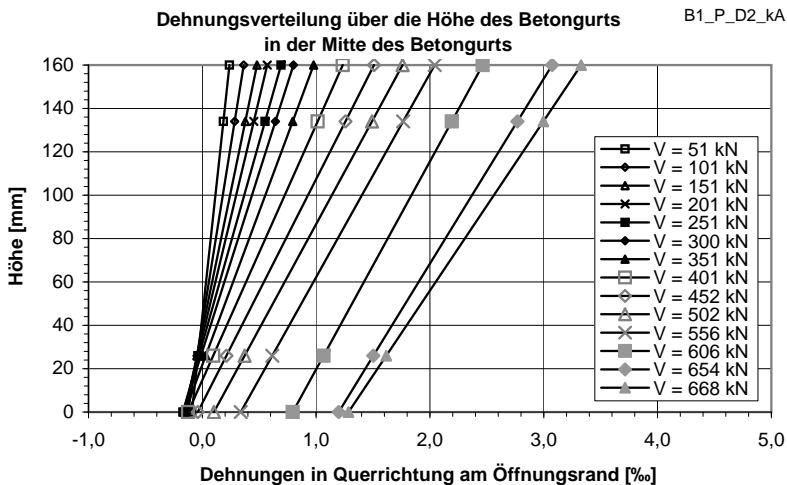
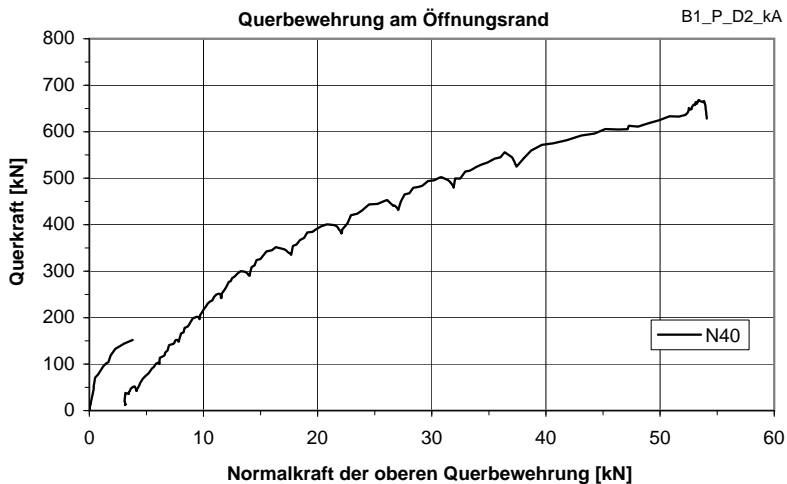




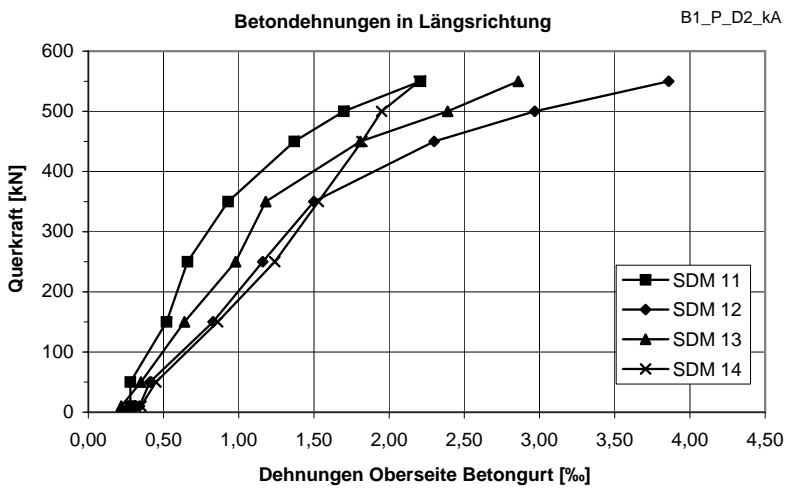
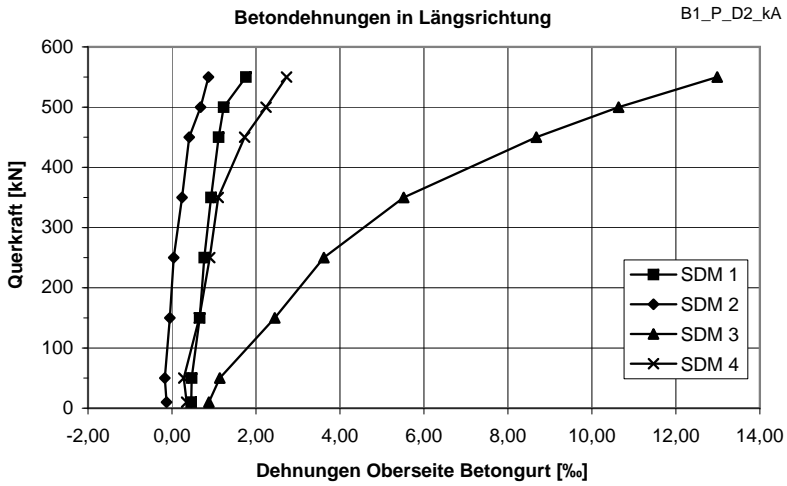
B.7.7. Querbewehrung

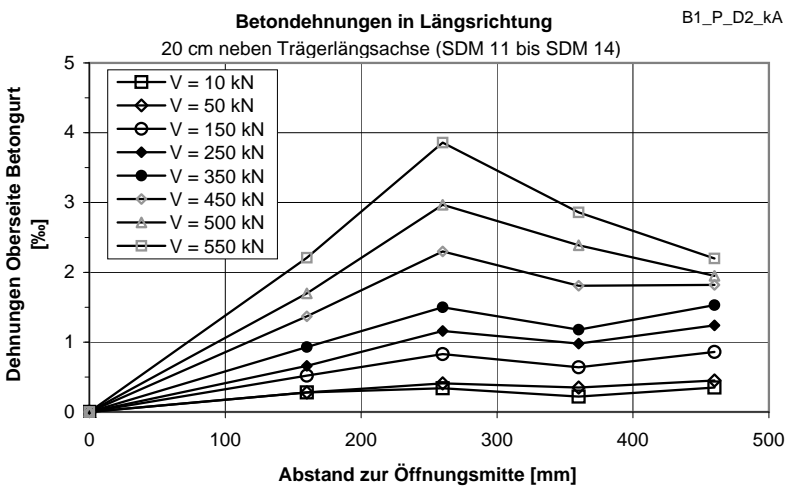
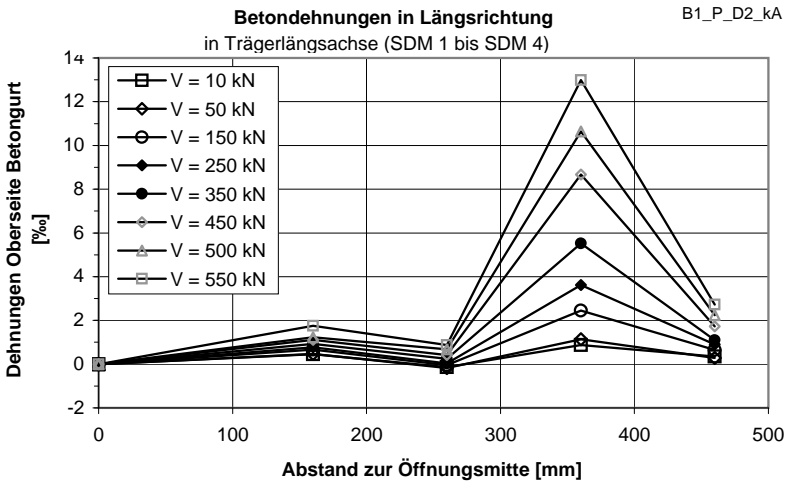
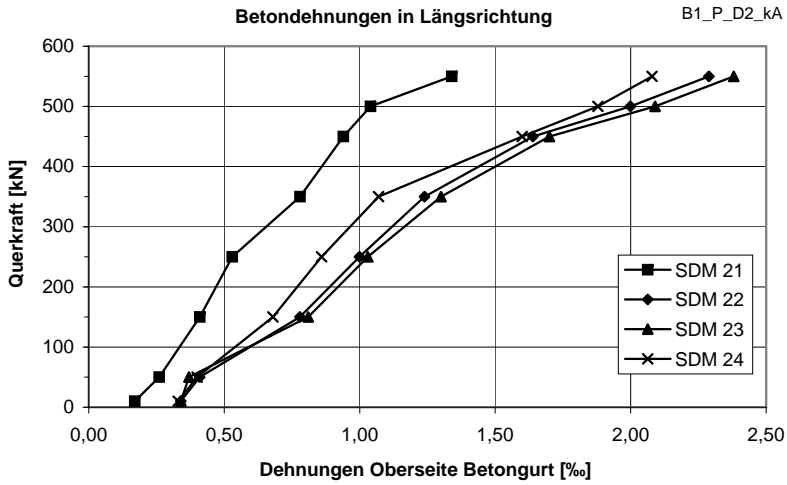


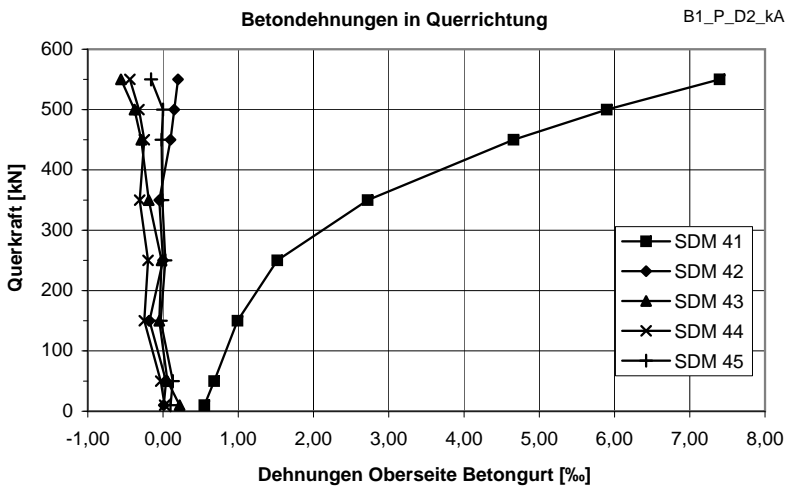
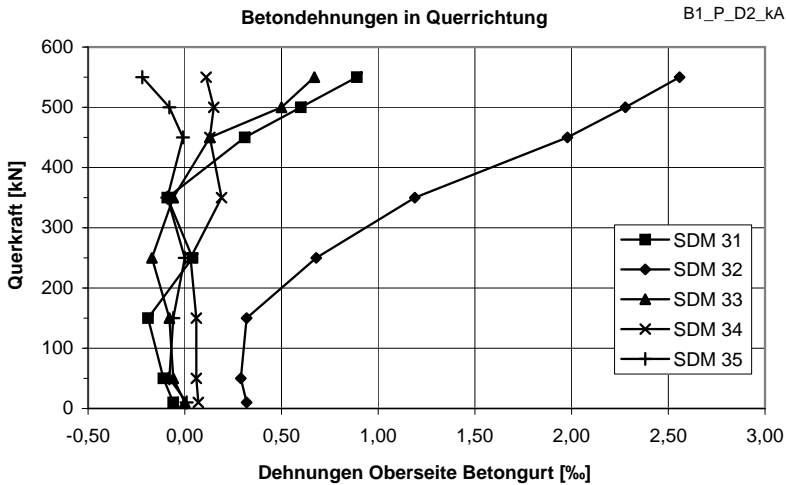
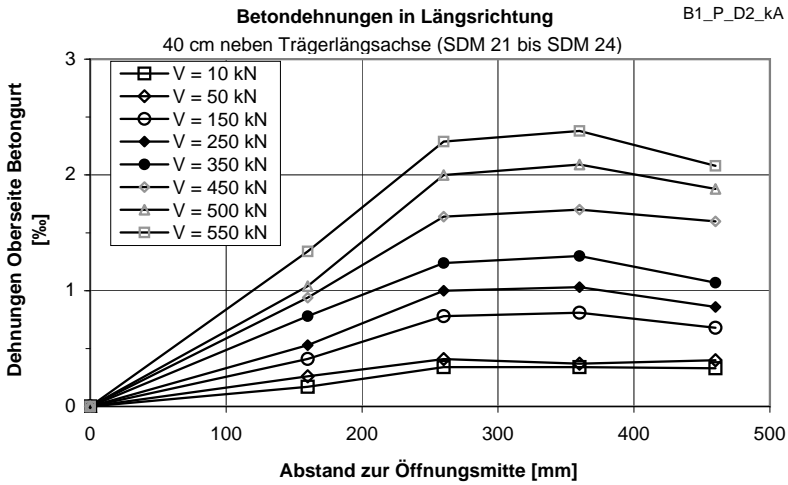


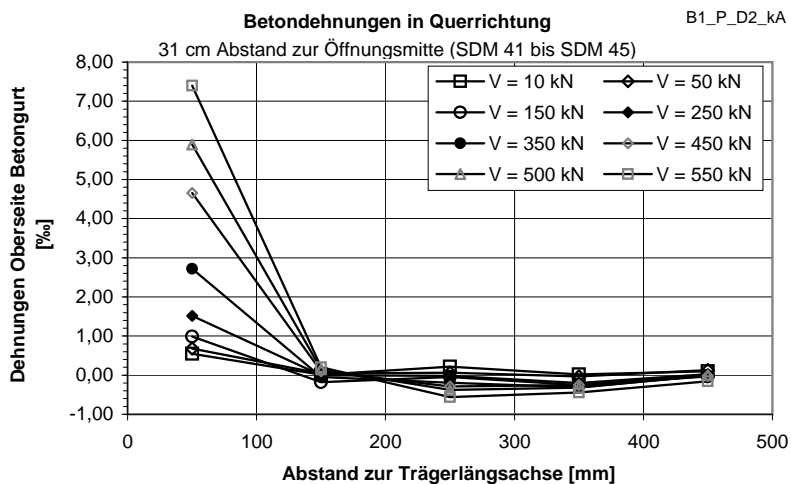
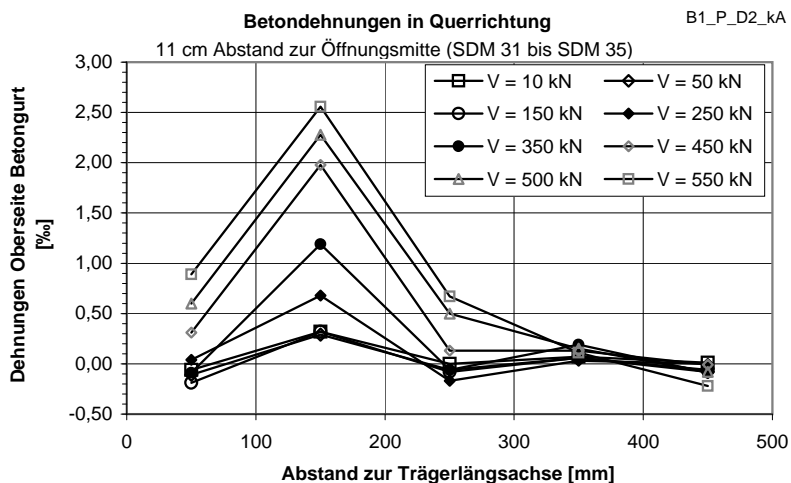
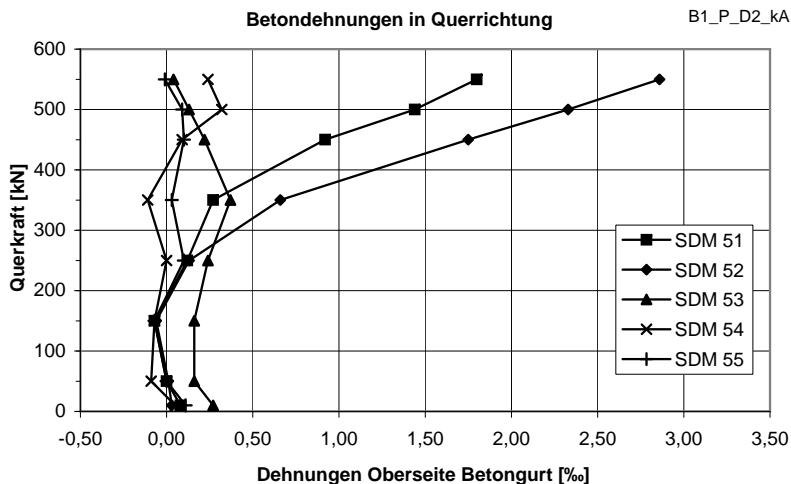


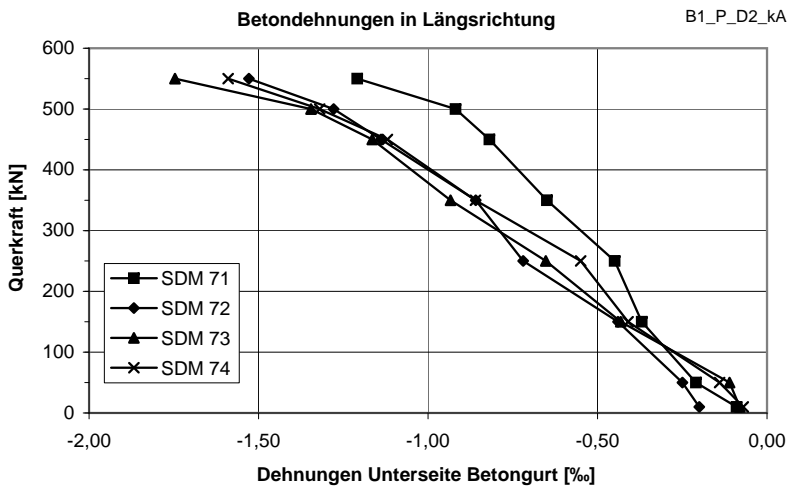
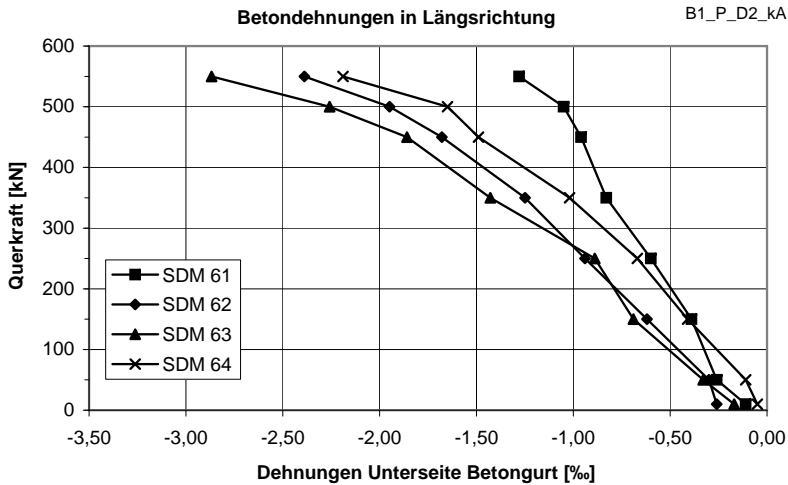
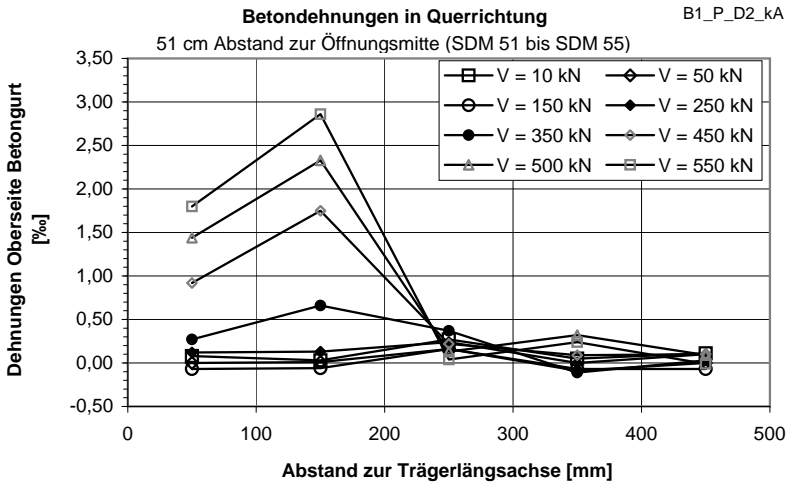
B.7.8. Betondehnungen

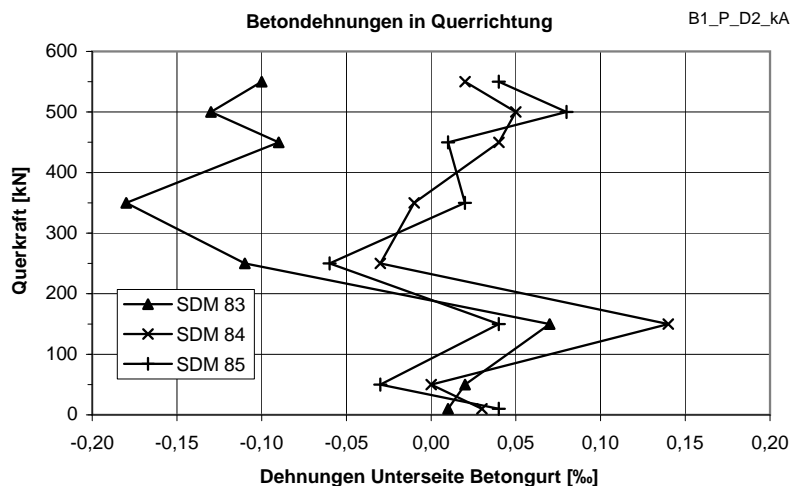
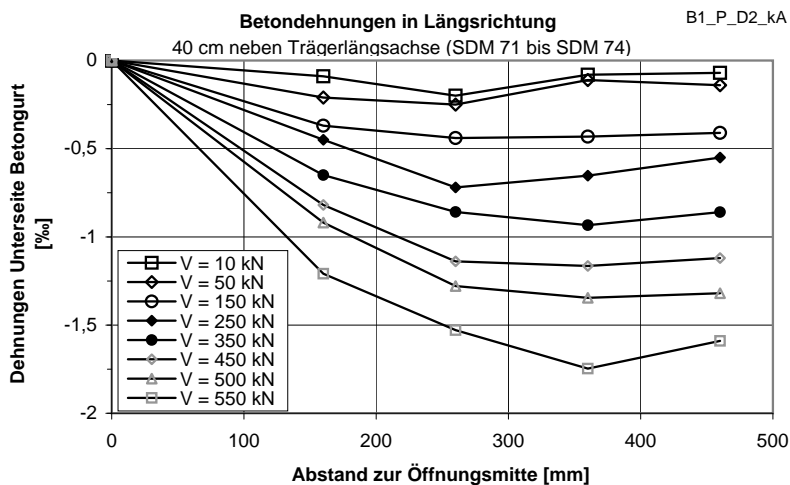
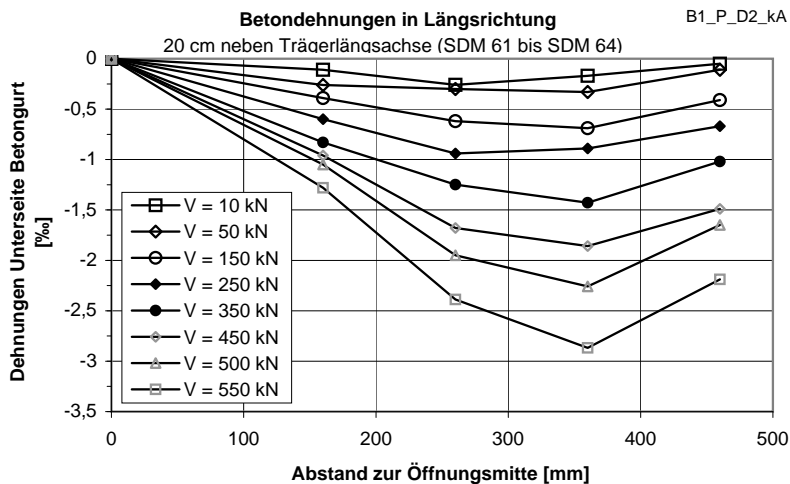


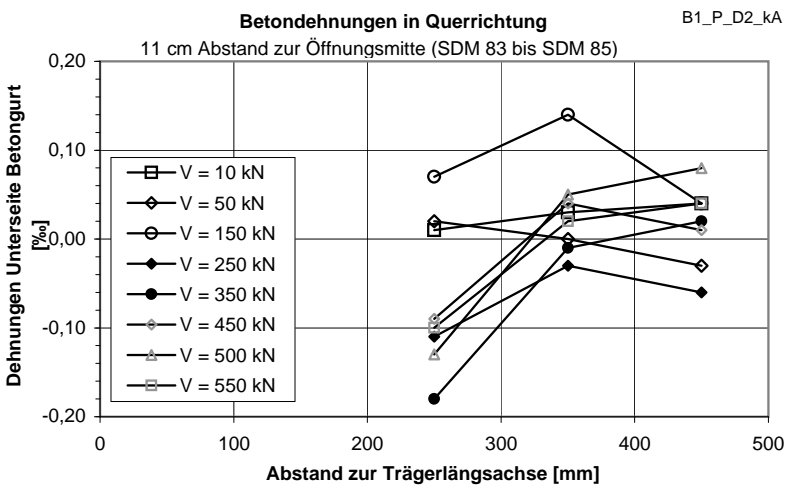
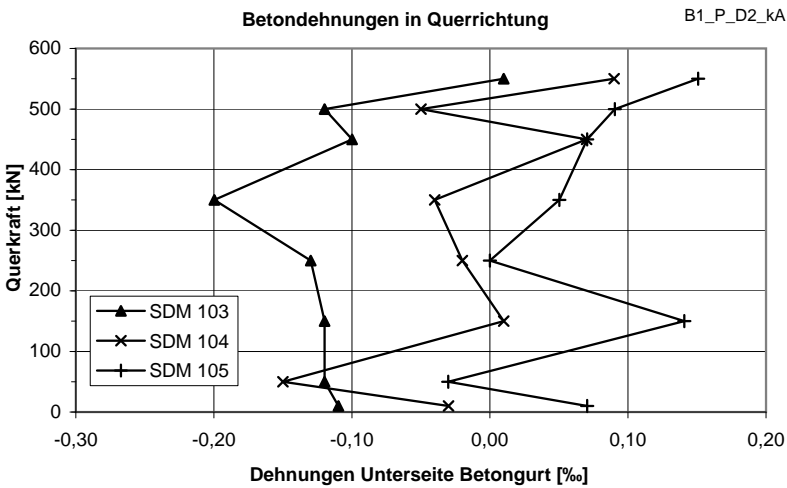
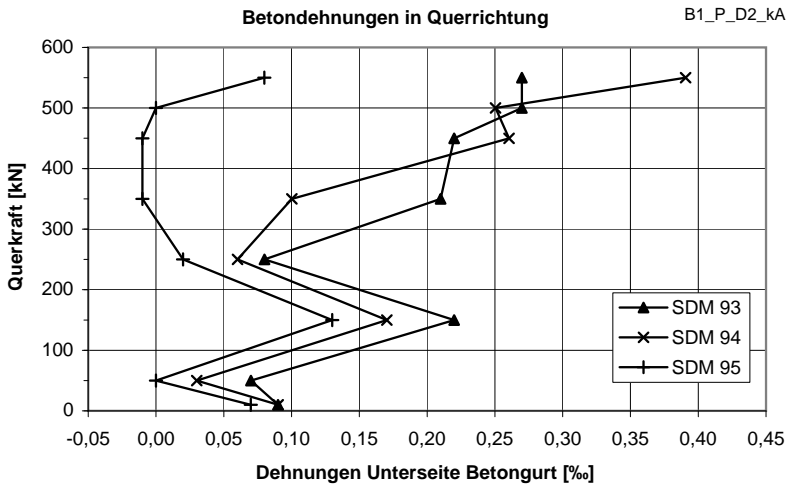


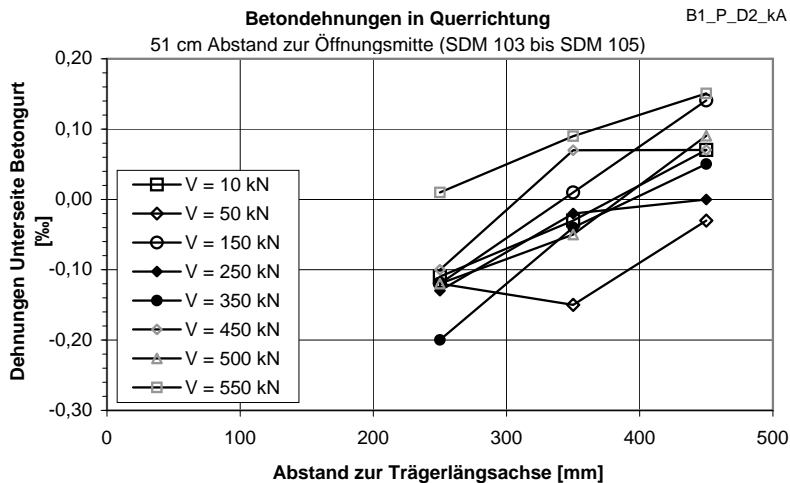
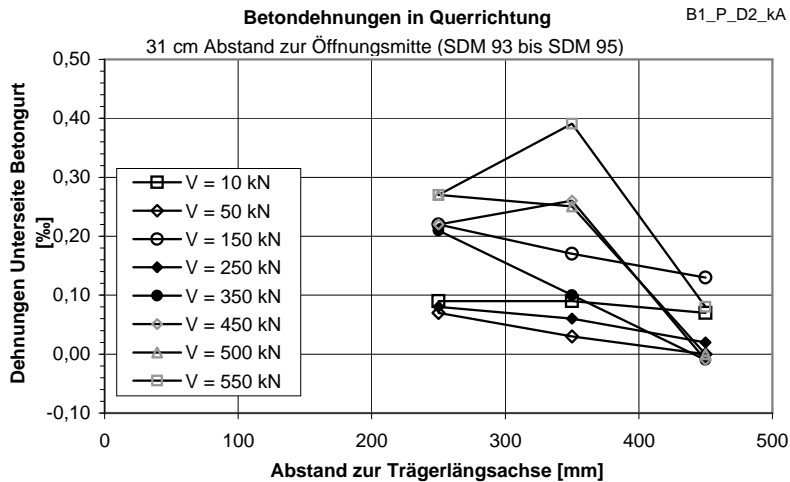






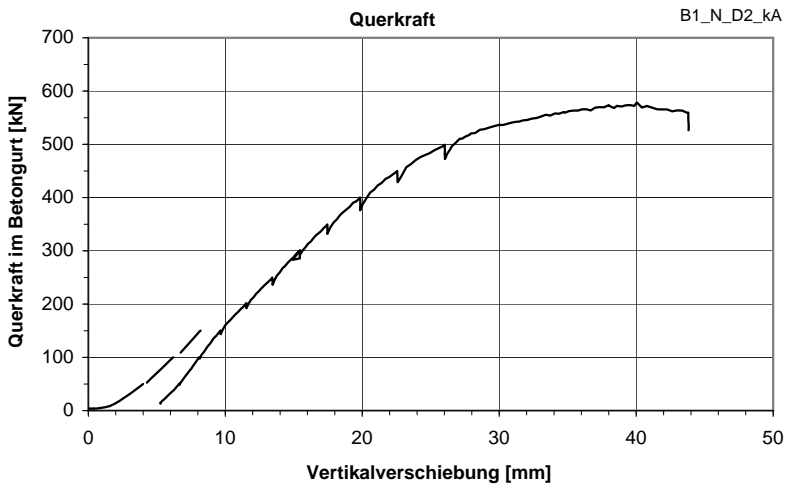
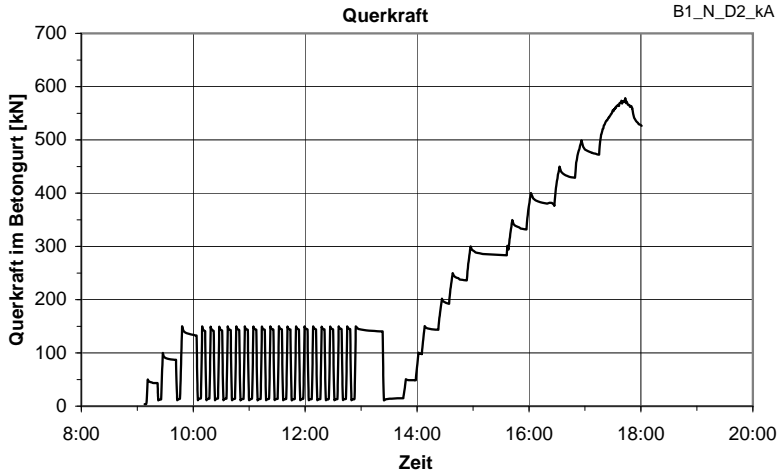


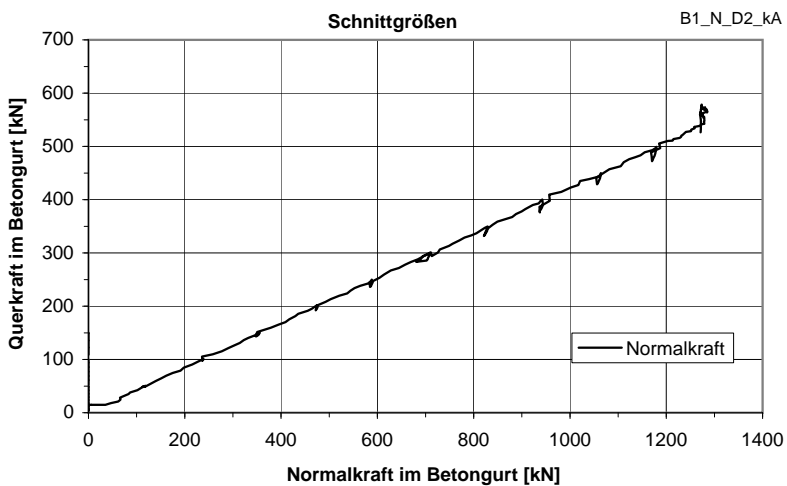
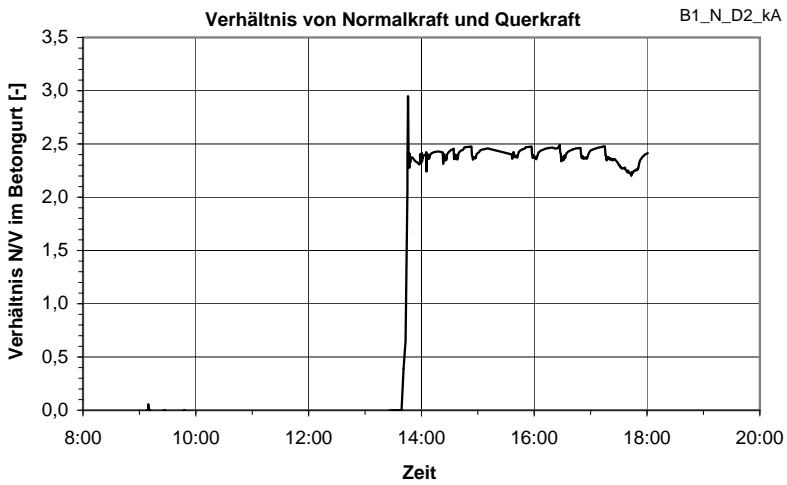
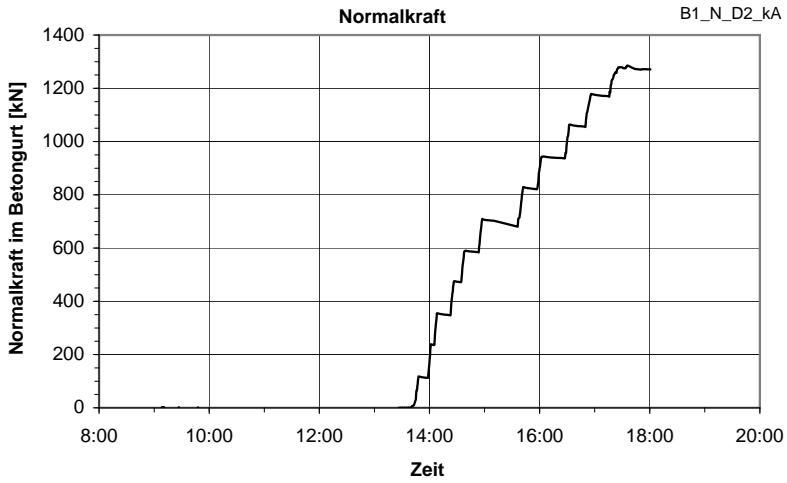


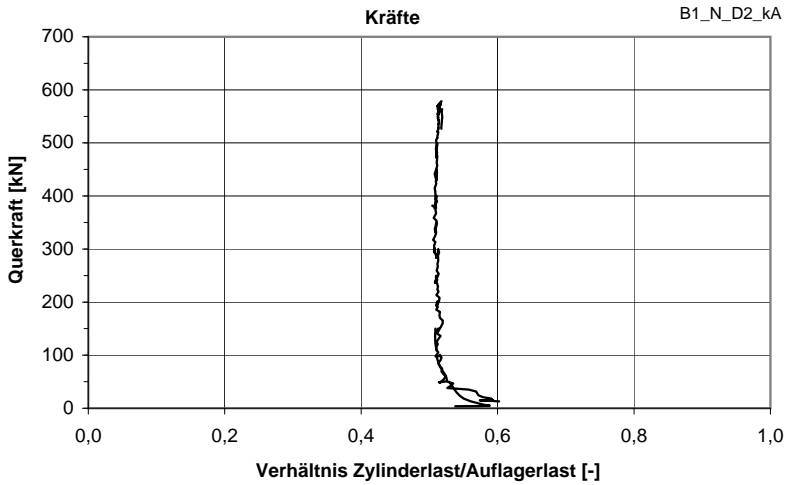
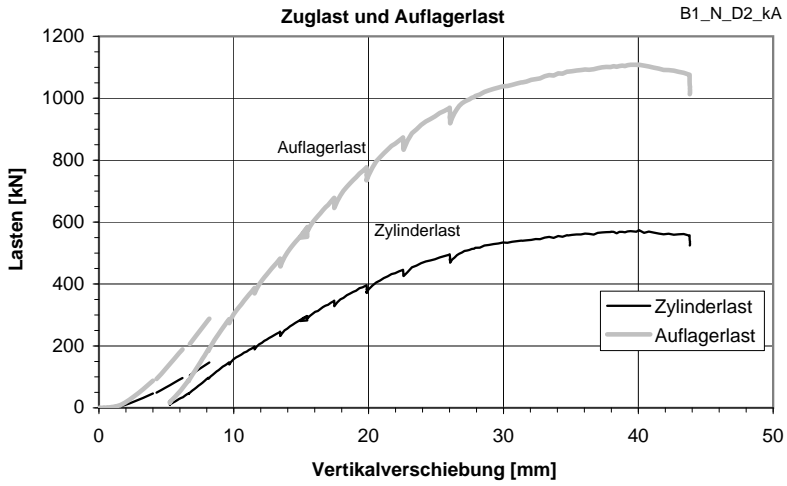


B.8. Versuch B1_N_D2_kA

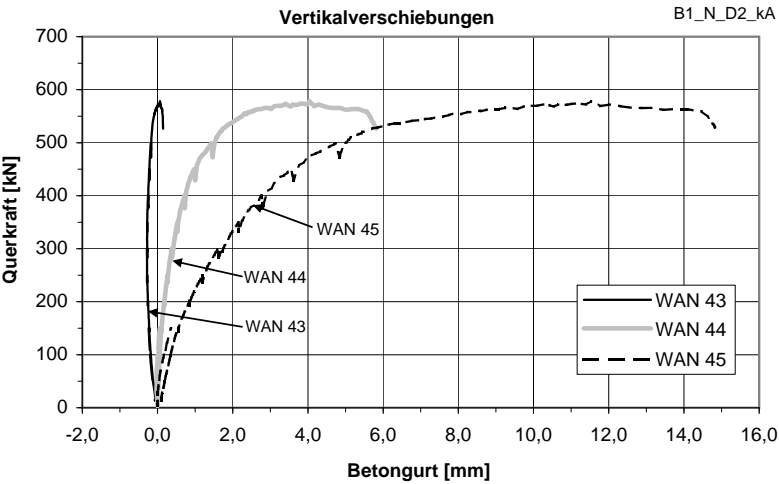
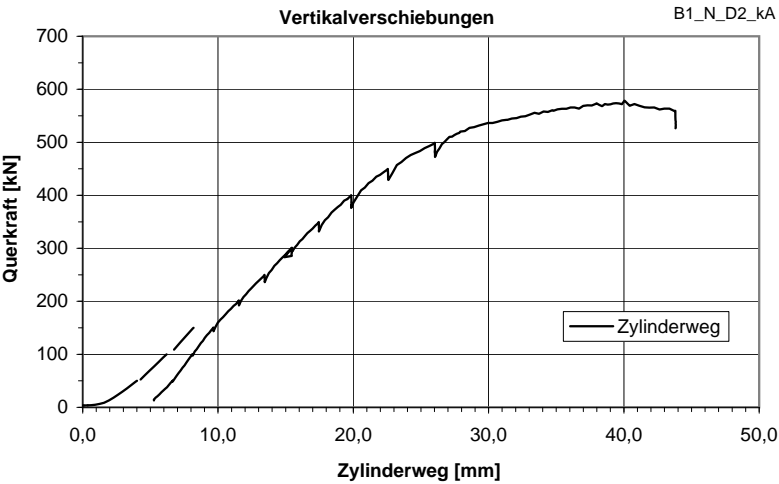
B.8.1. Kräfte

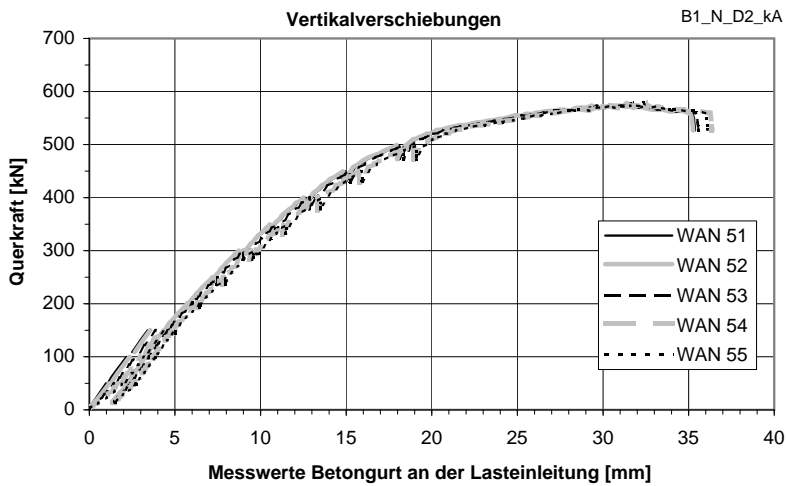
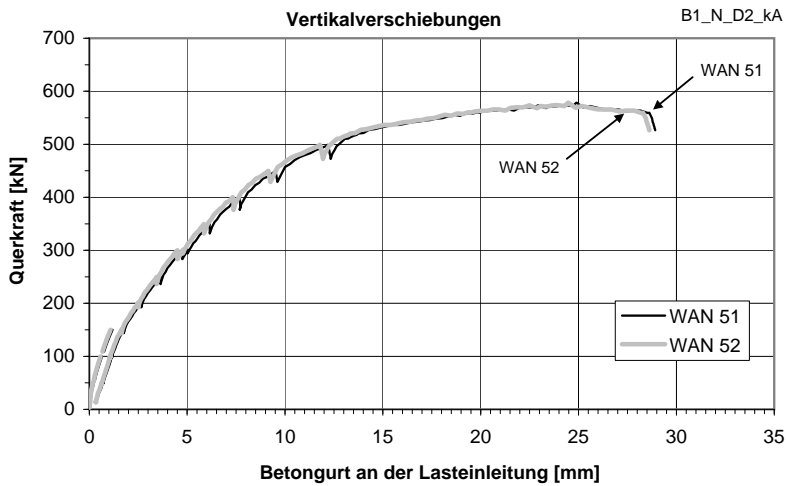
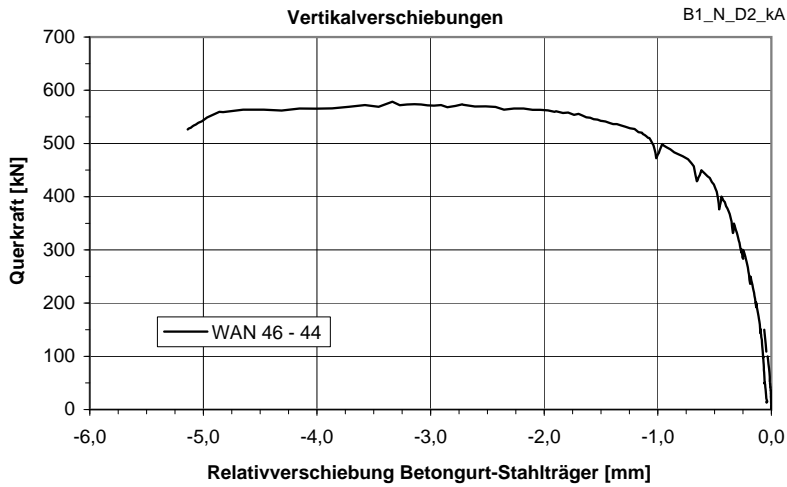




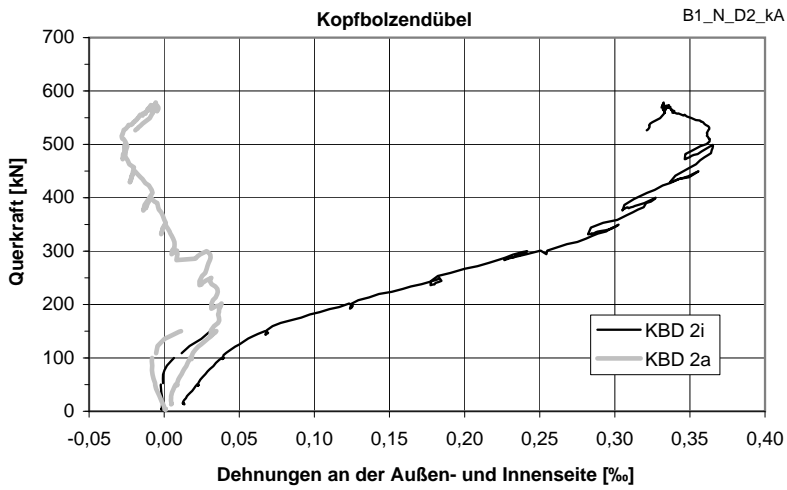
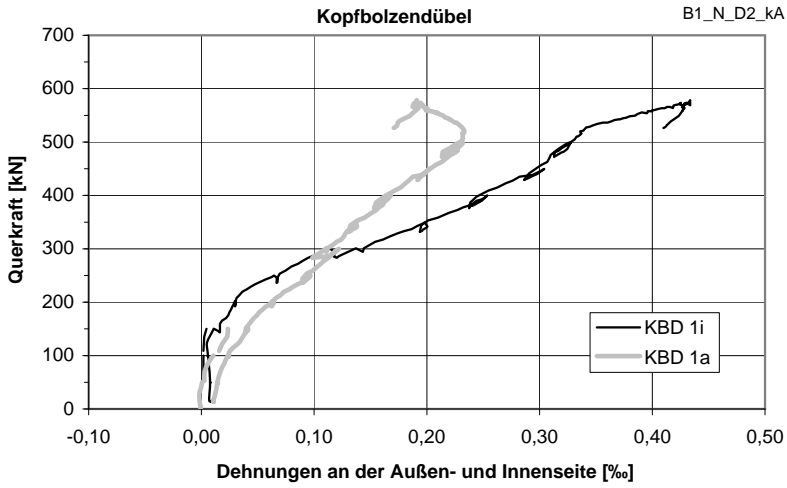


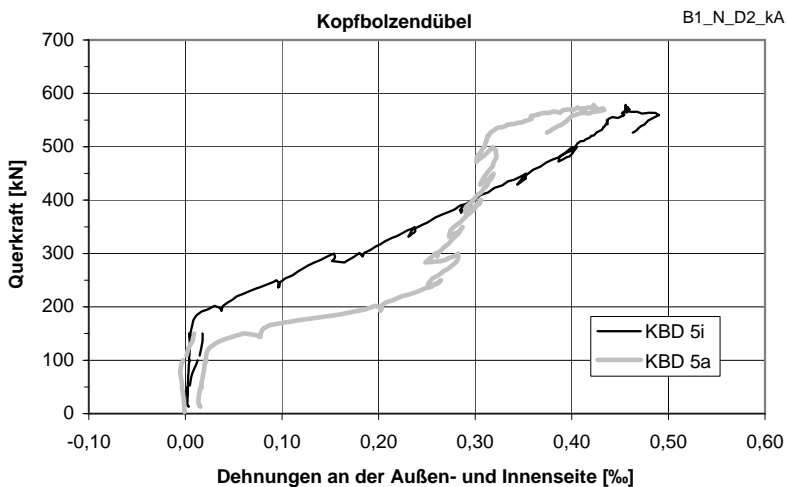
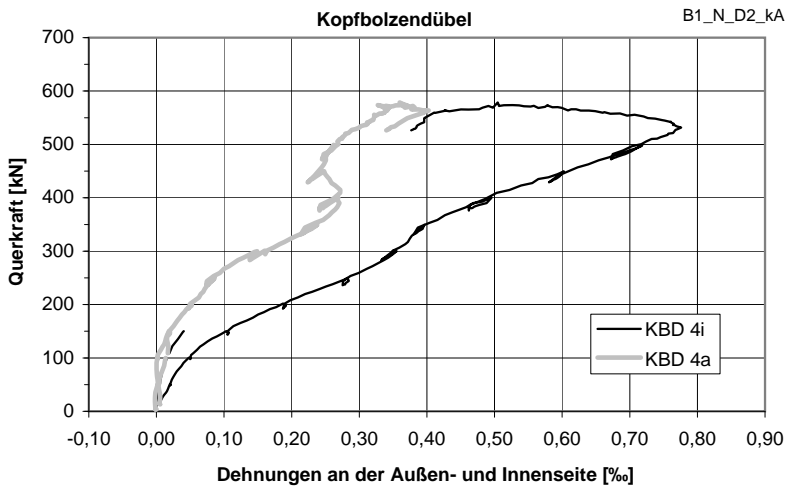
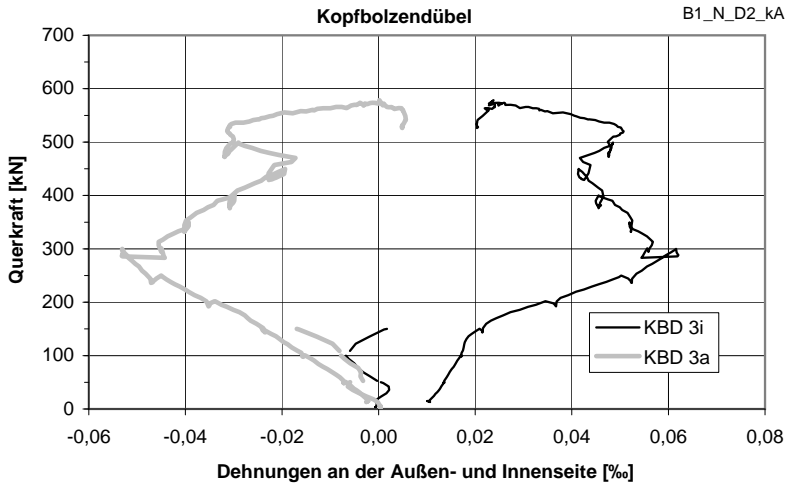
B.8.2. Verformungen

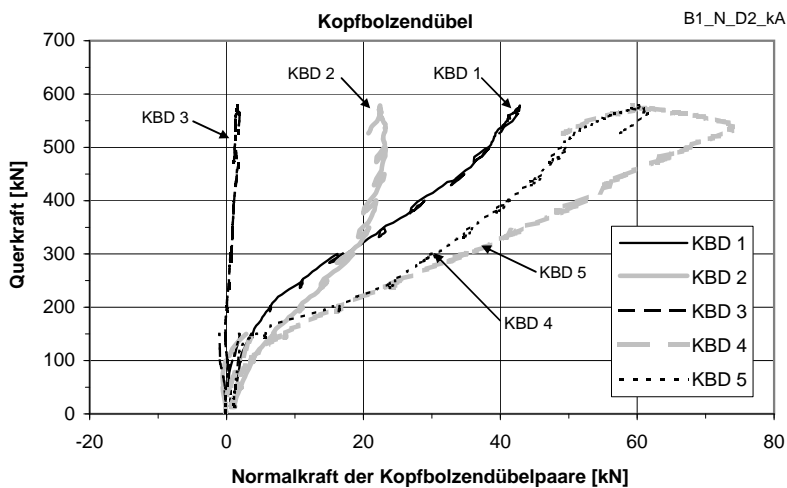
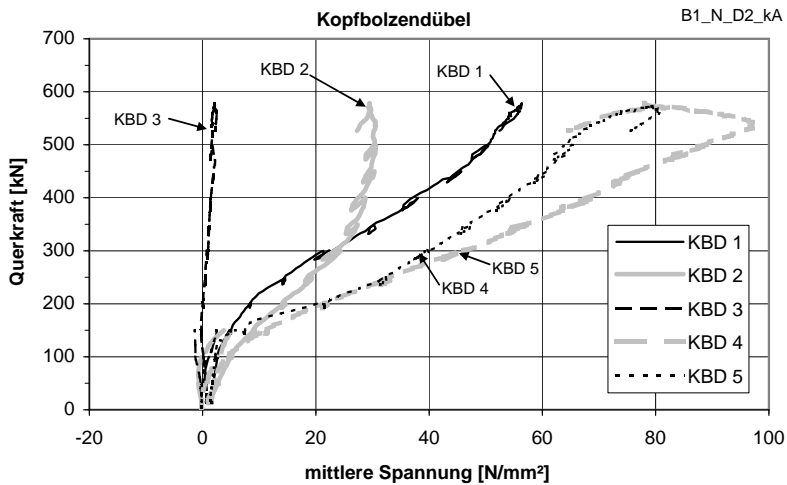
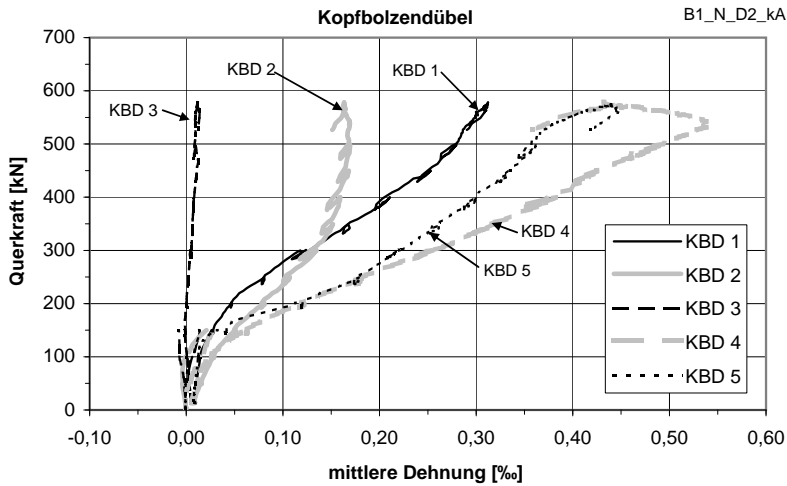




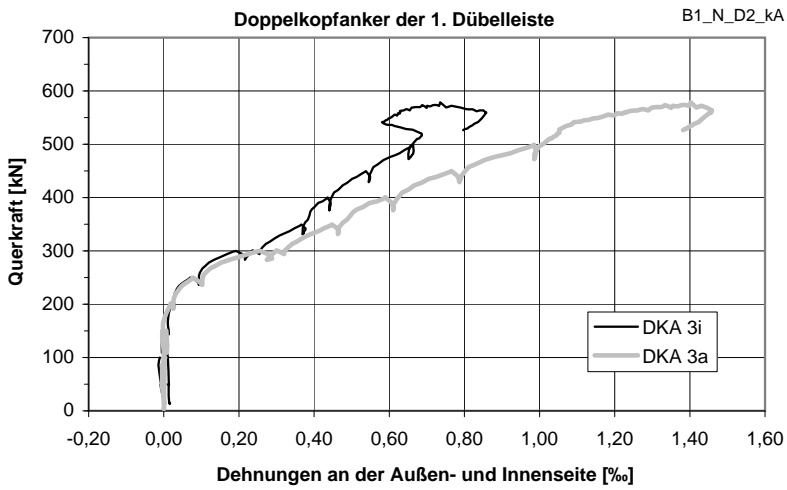
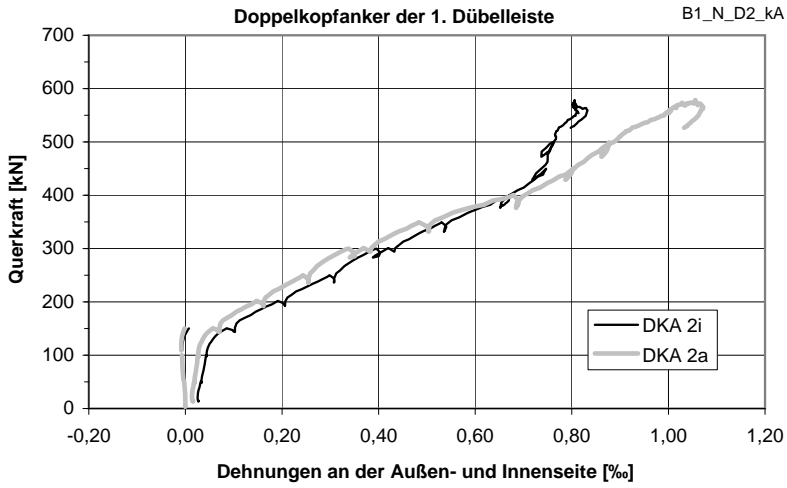
B.8.3. Kopfbolzendübel

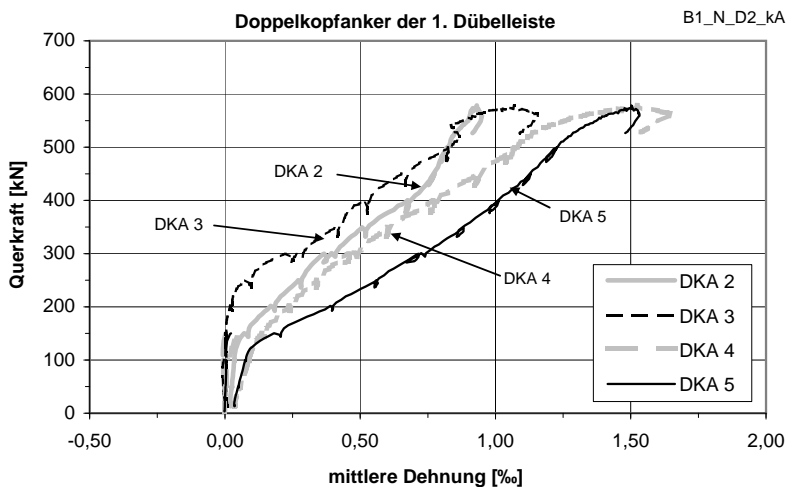
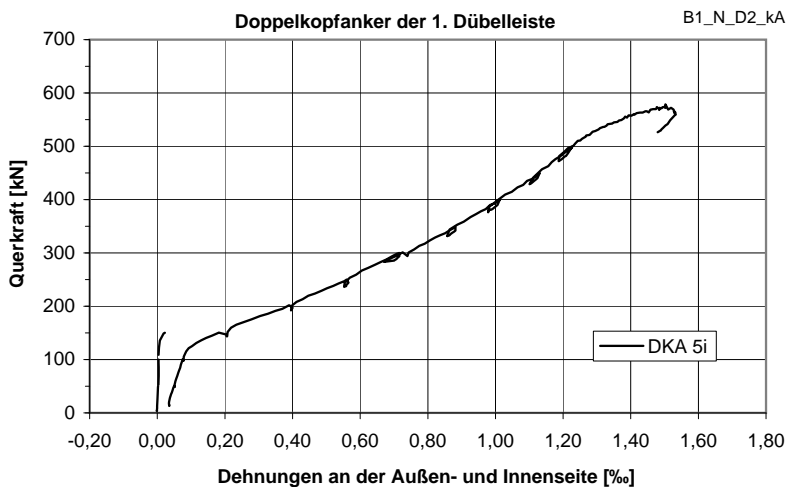
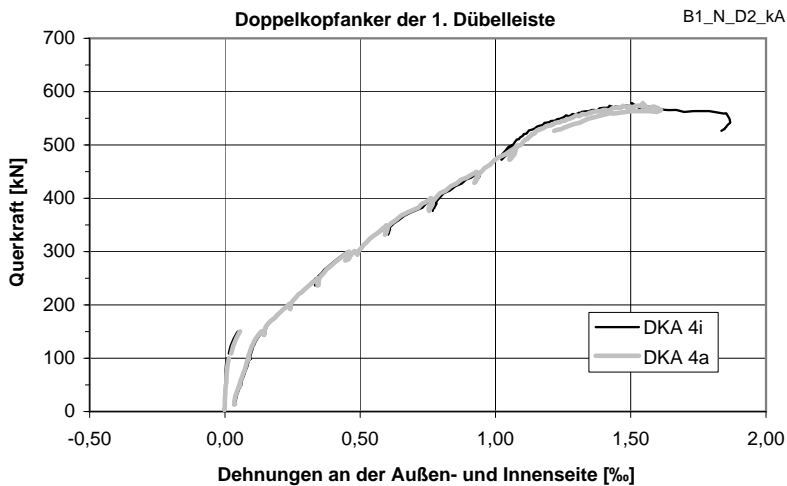


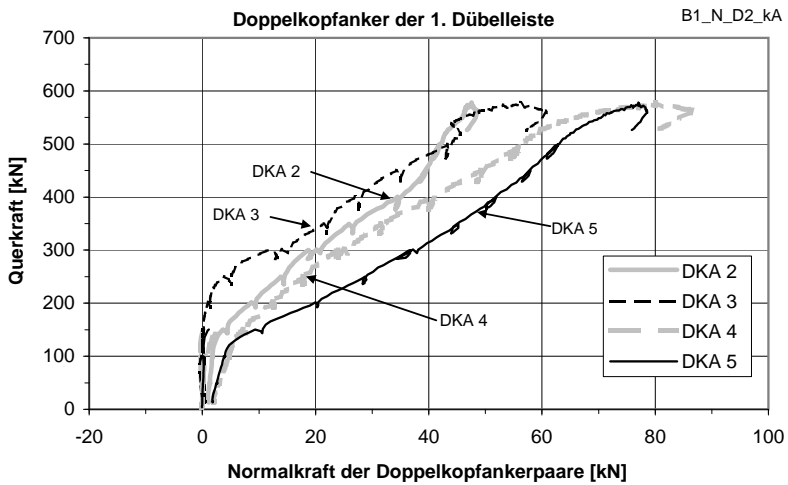
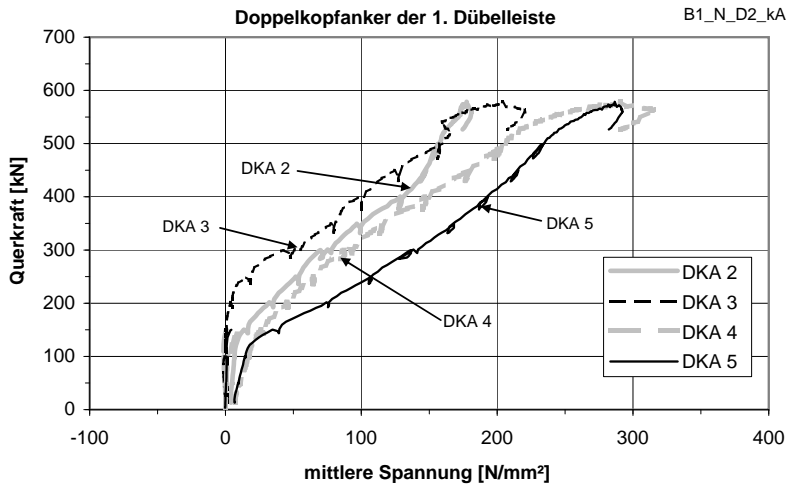




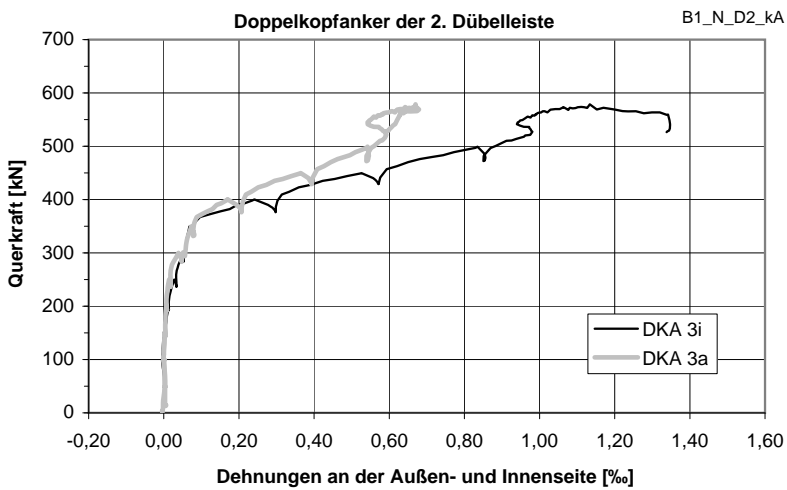
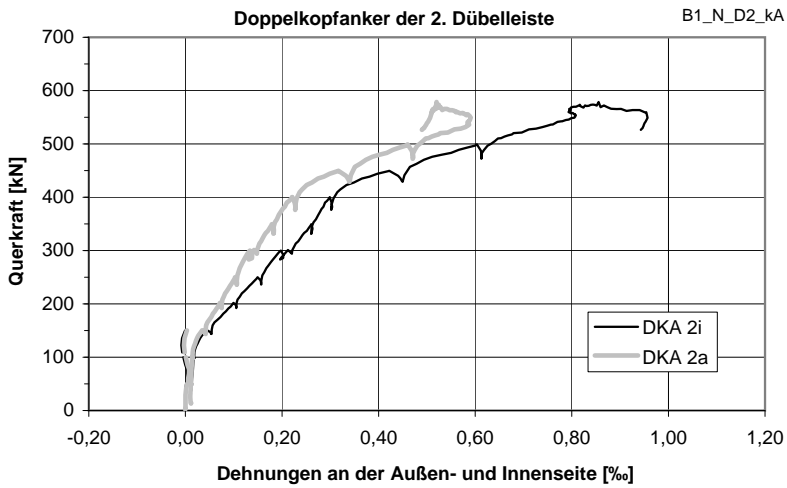
B.8.4. Doppelkopfkanker der ersten Dübelleiste

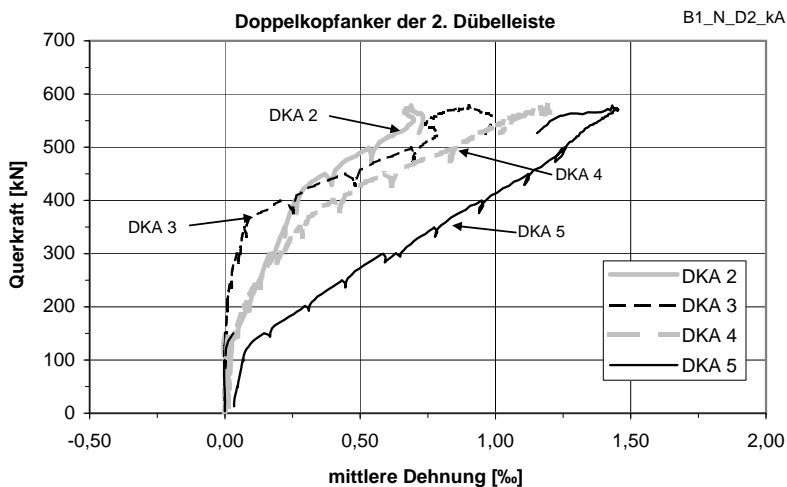
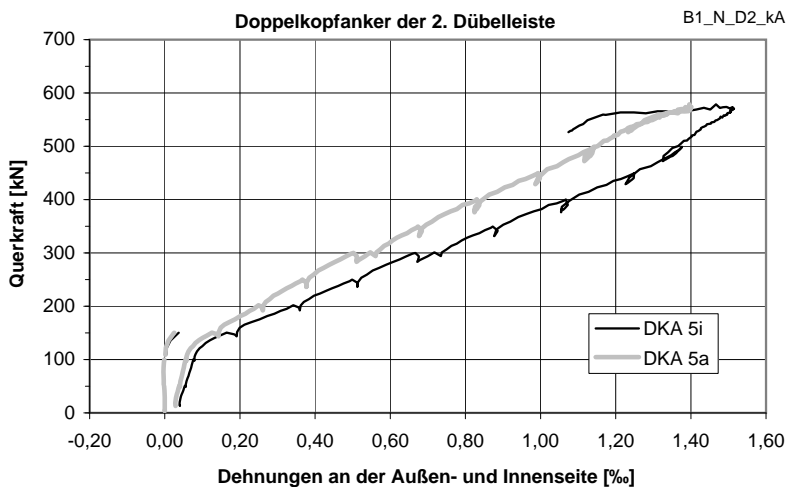
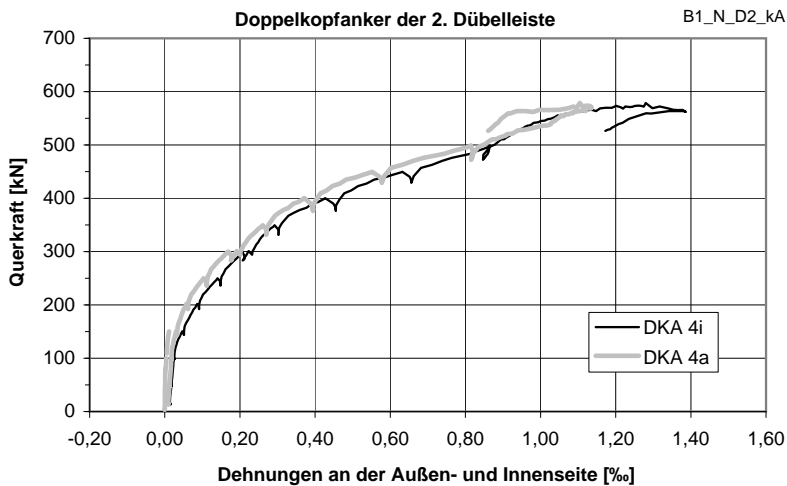


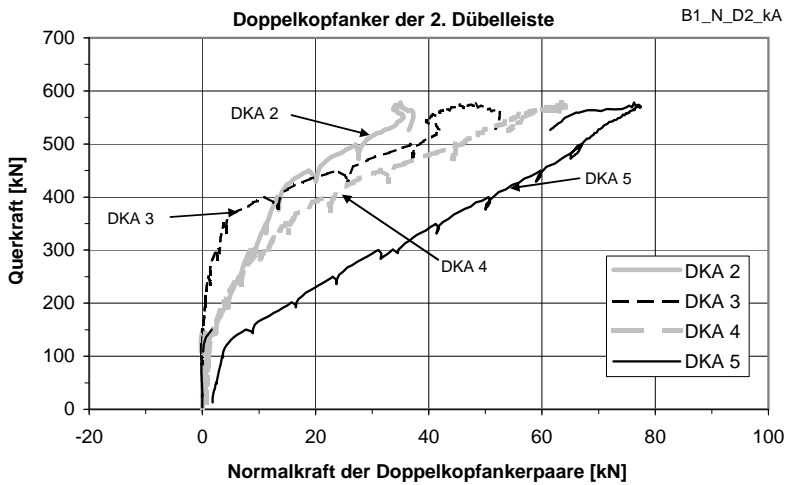
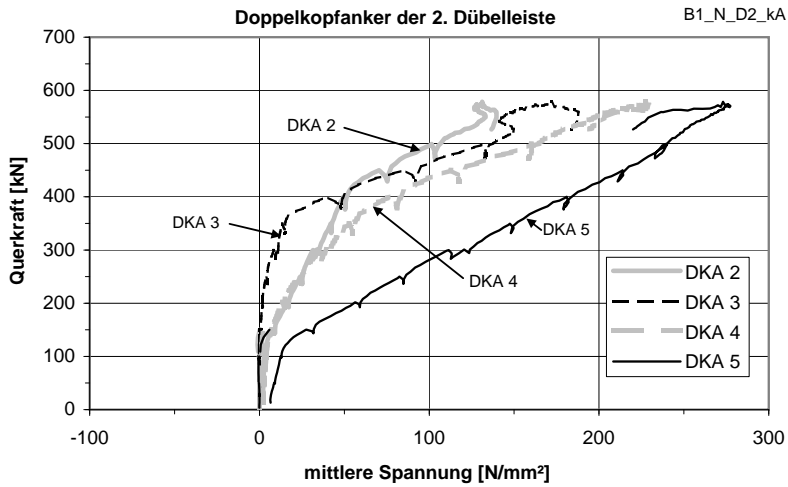




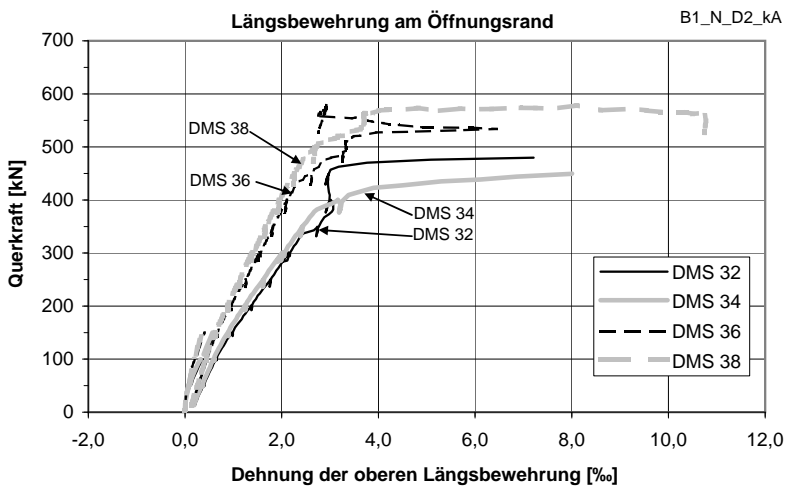
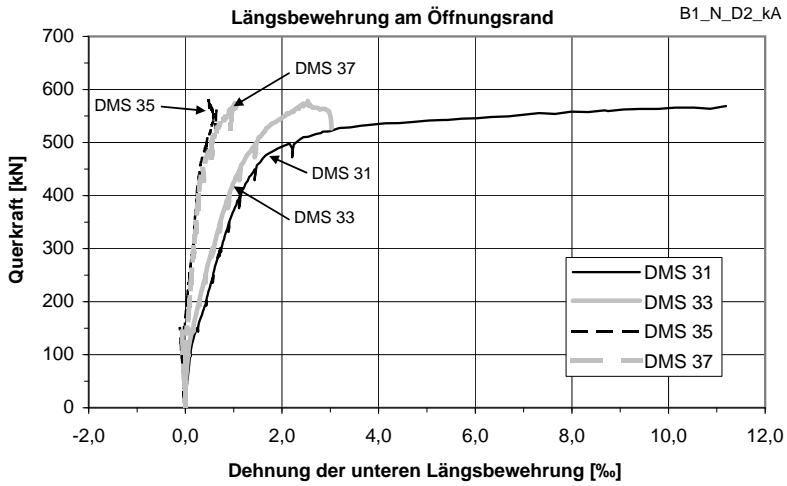
B.8.5. Doppelkopfkanker der zweiten Dübelleiste

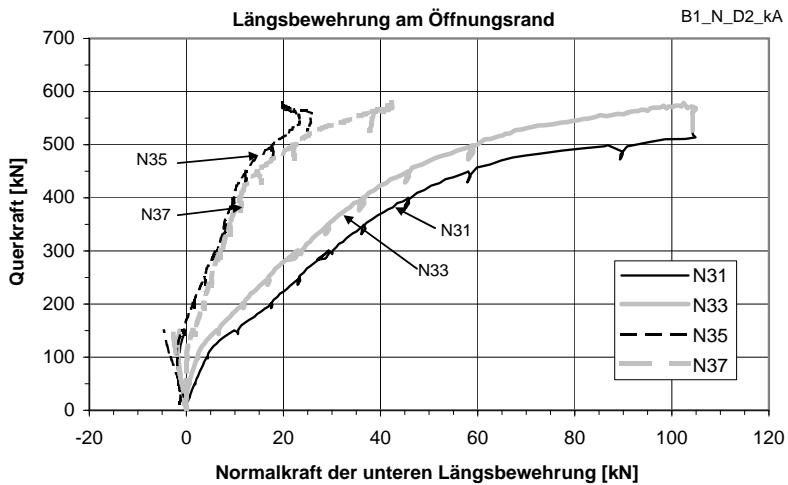
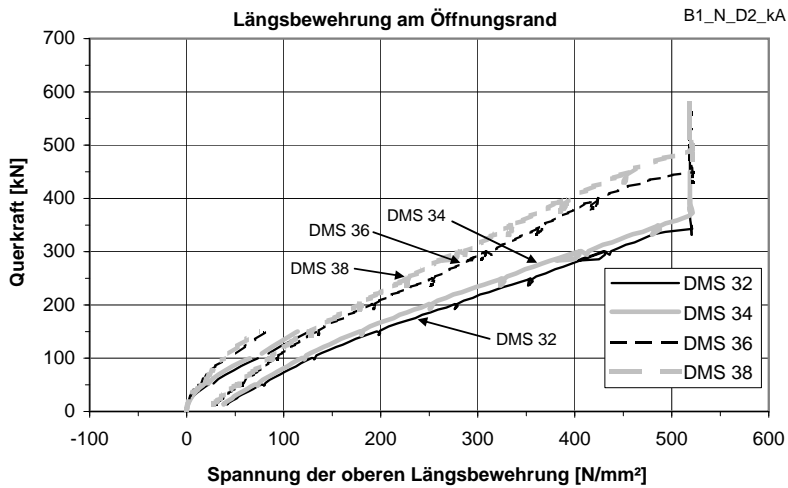
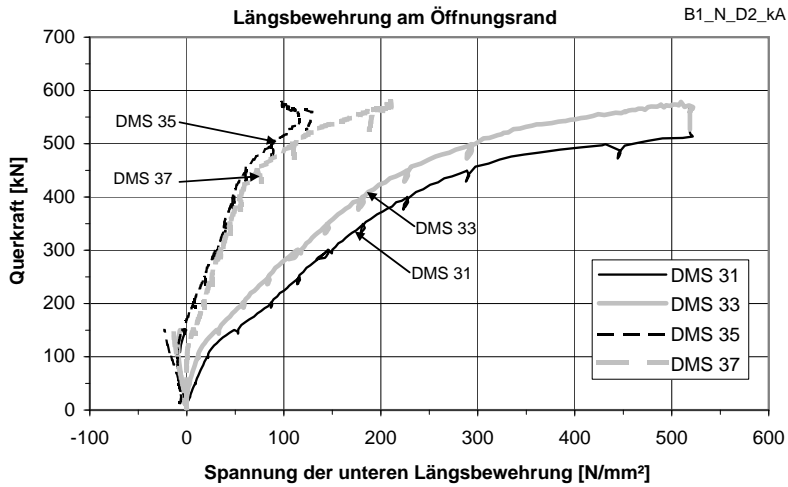


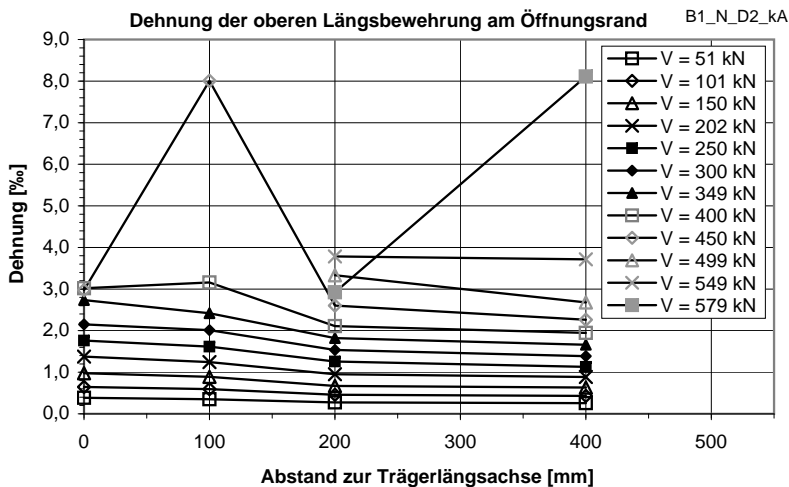
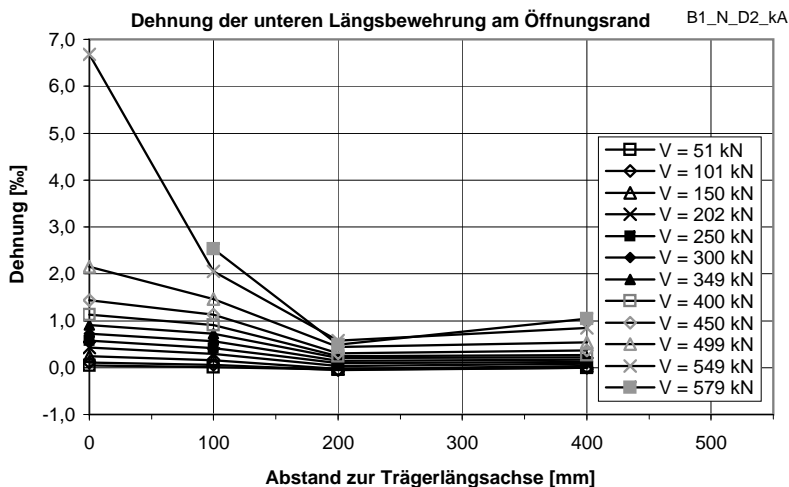
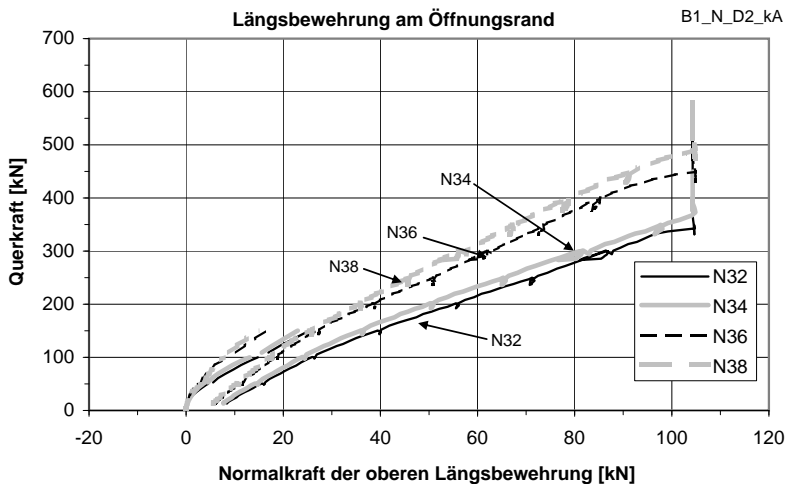


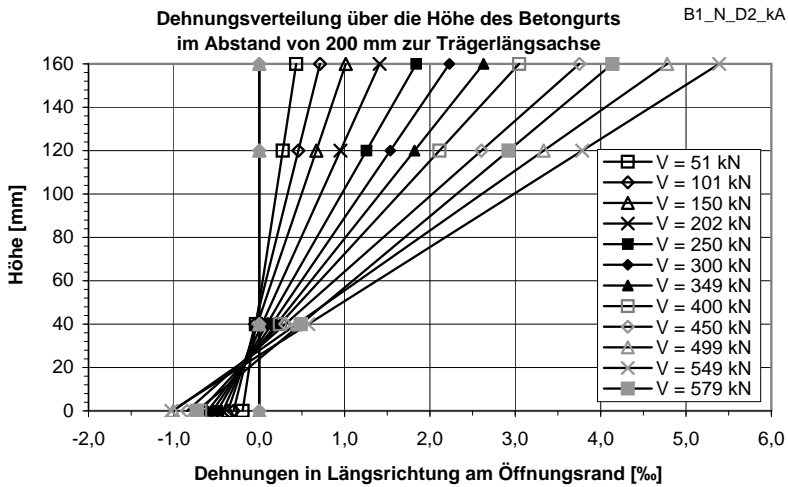
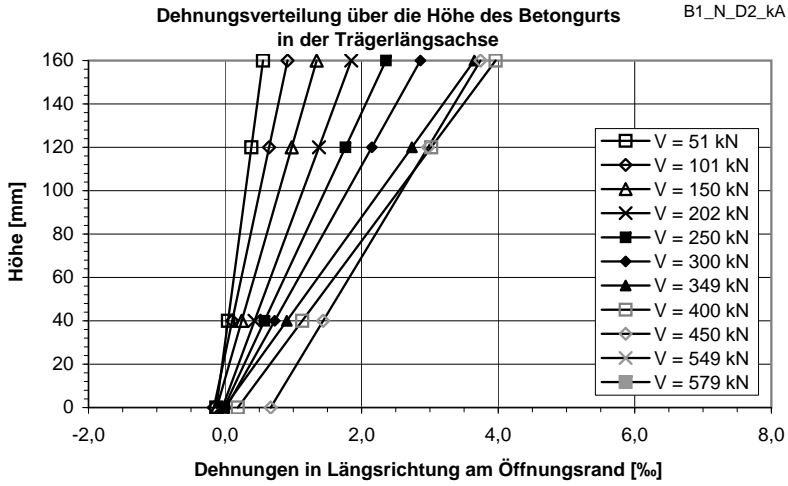


B.8.6. Längsbewehrung

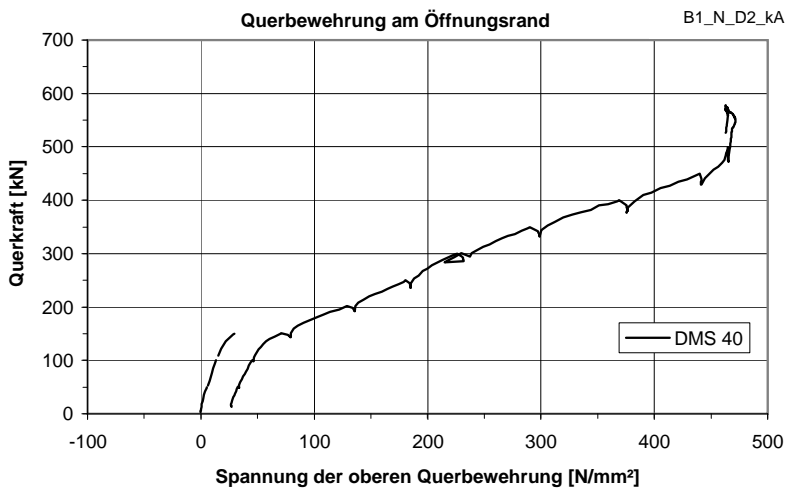
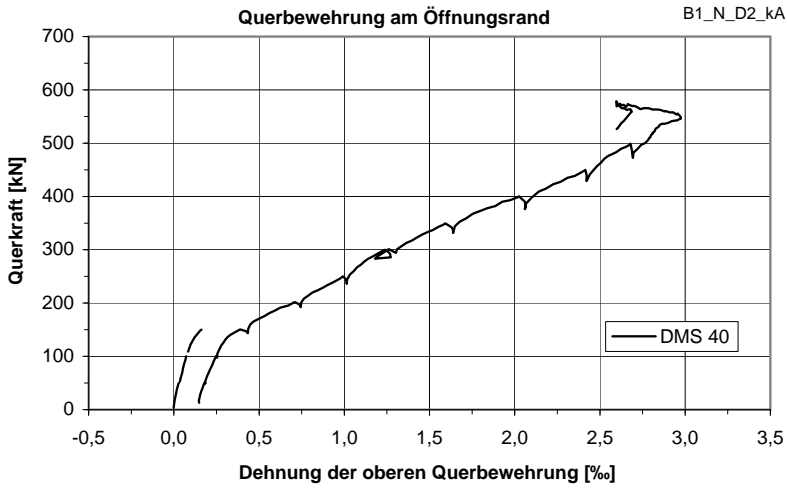


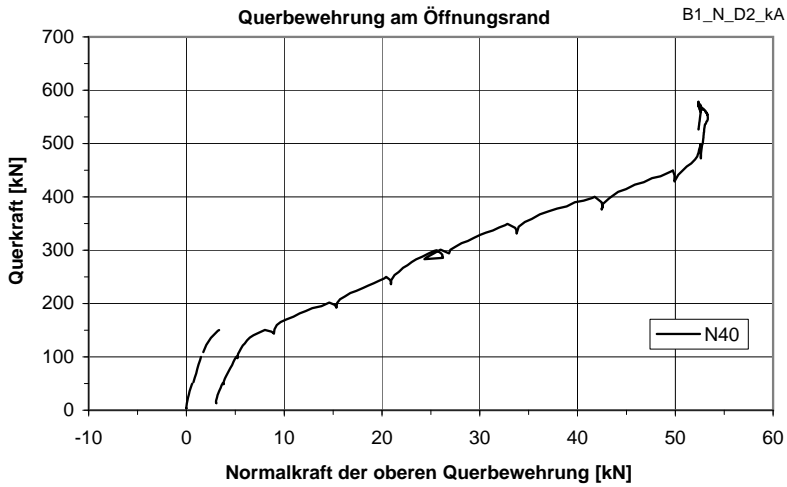




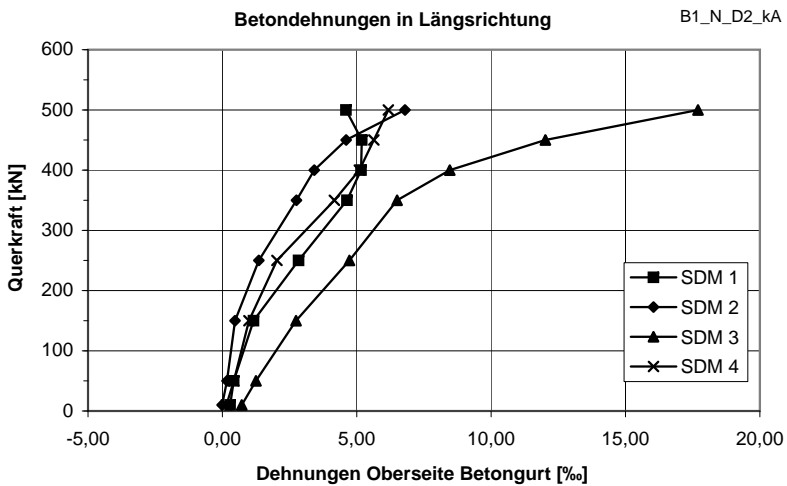


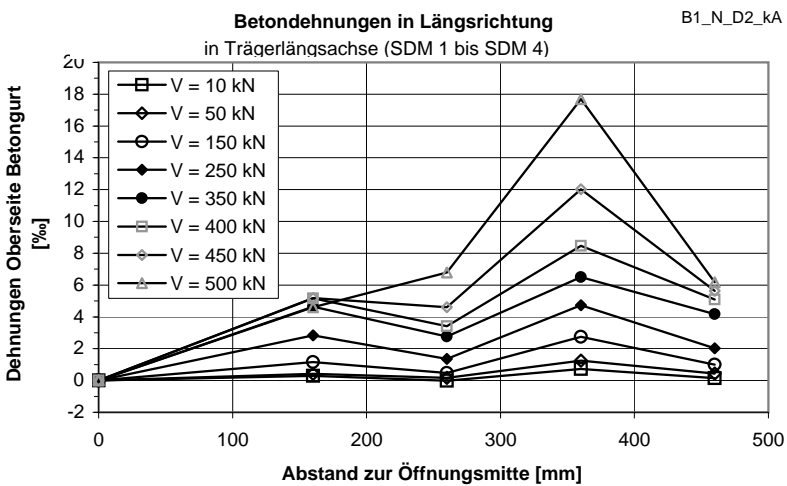
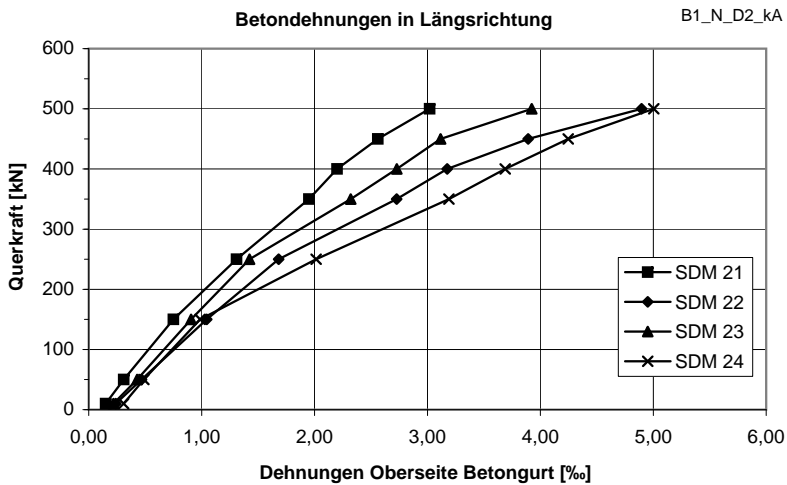
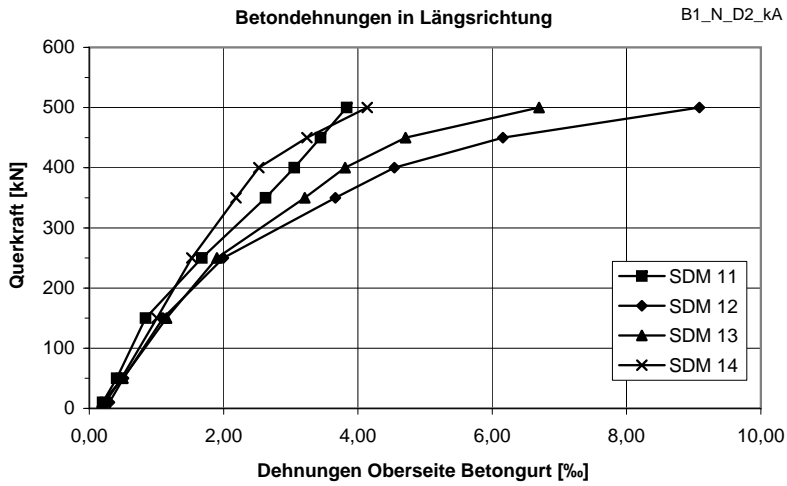
B.8.7. Querbewehrung

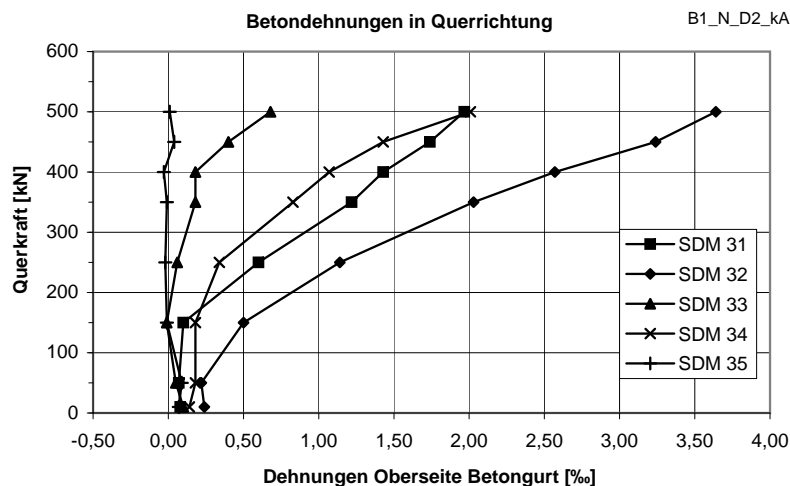
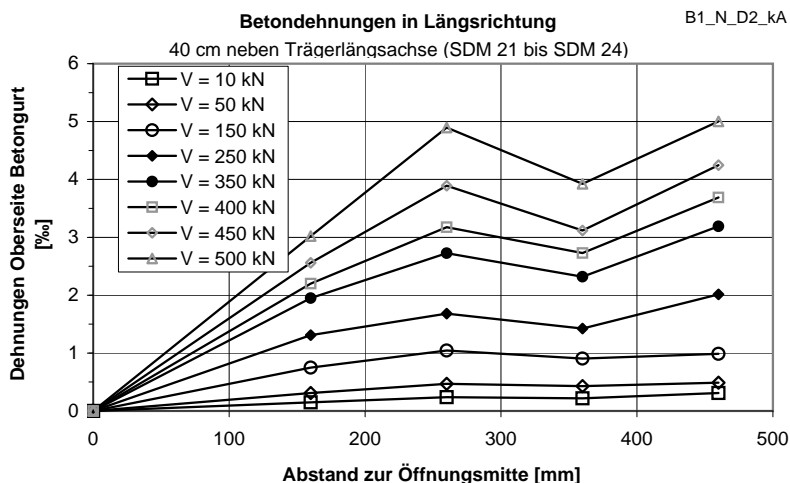
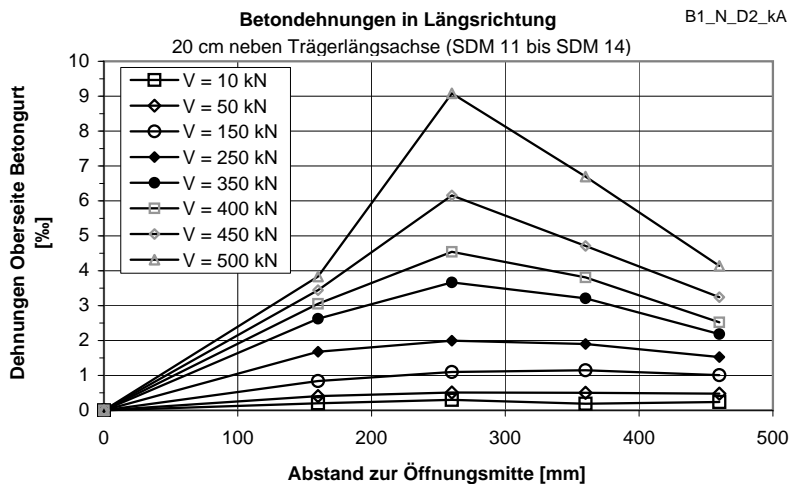


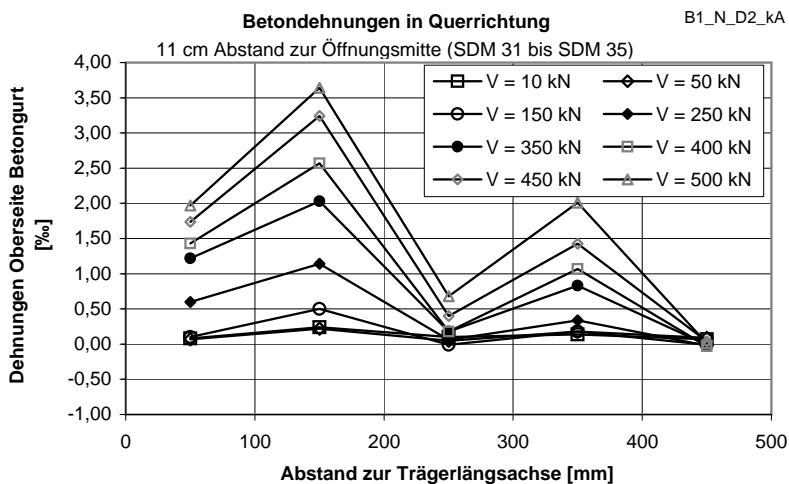
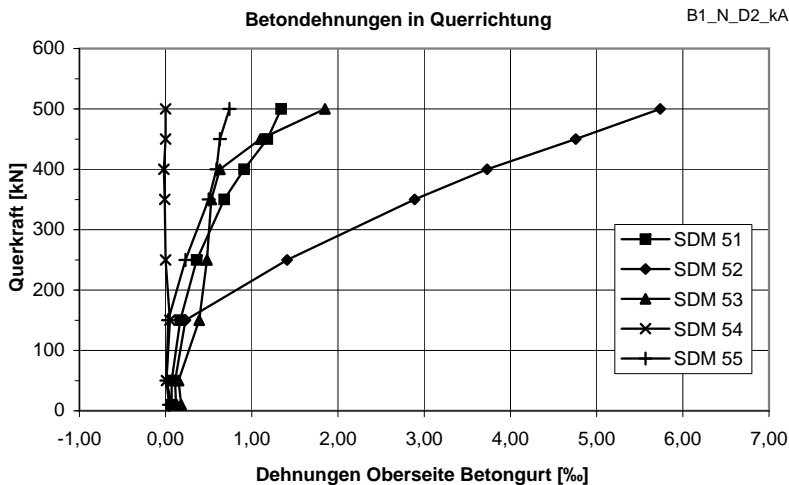
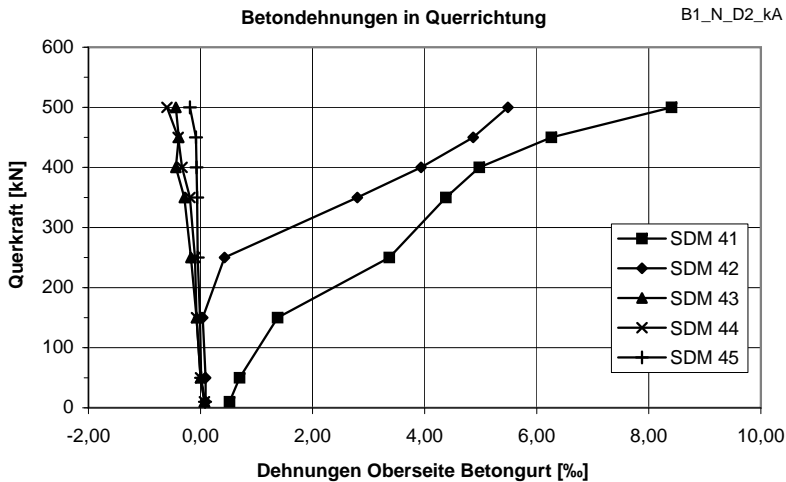


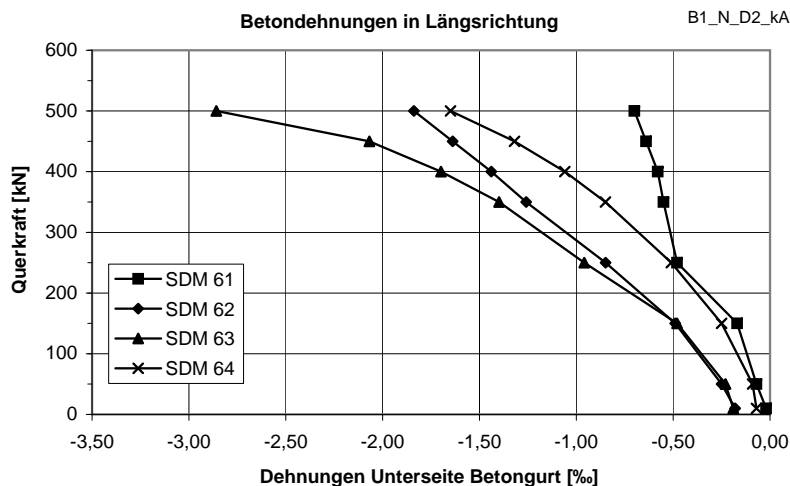
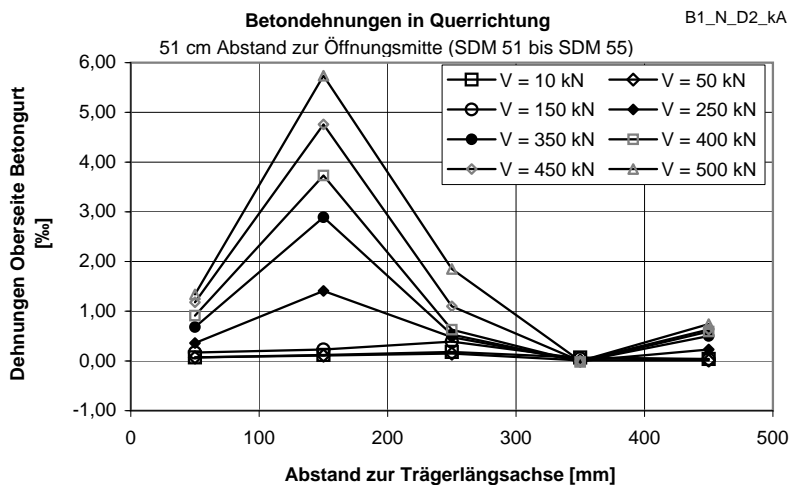
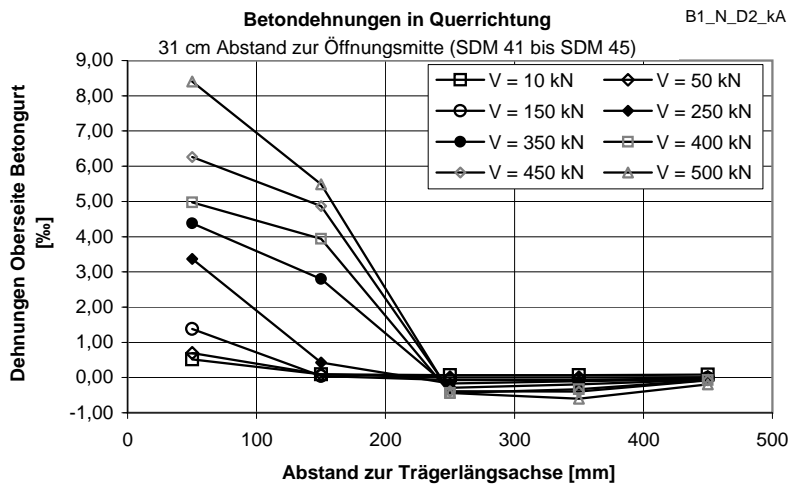
B.8.8. Betondehnungen

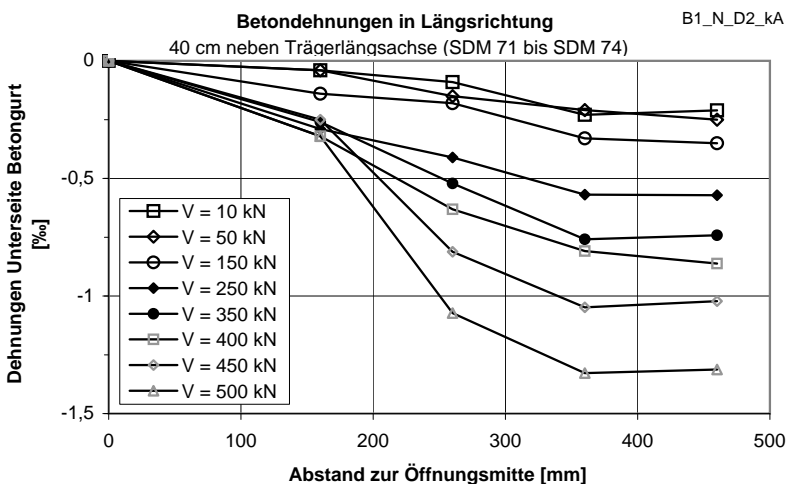
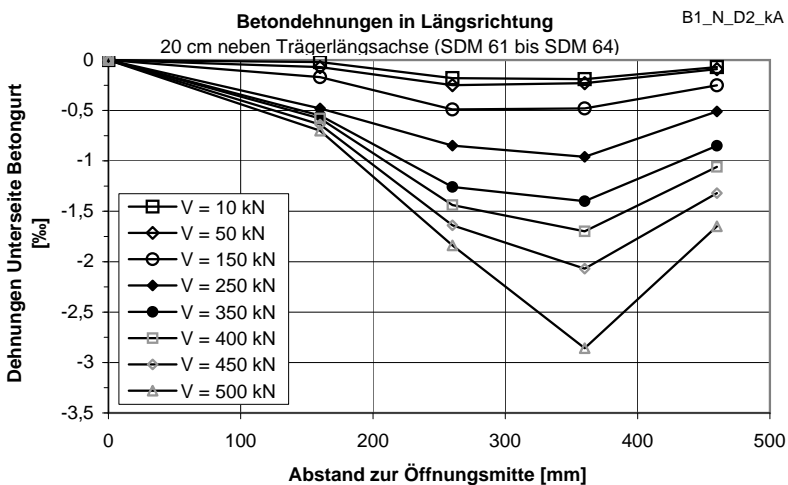
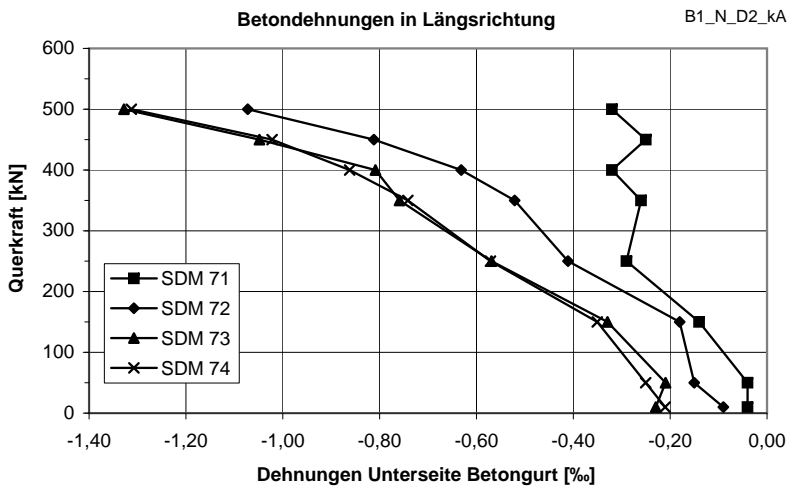


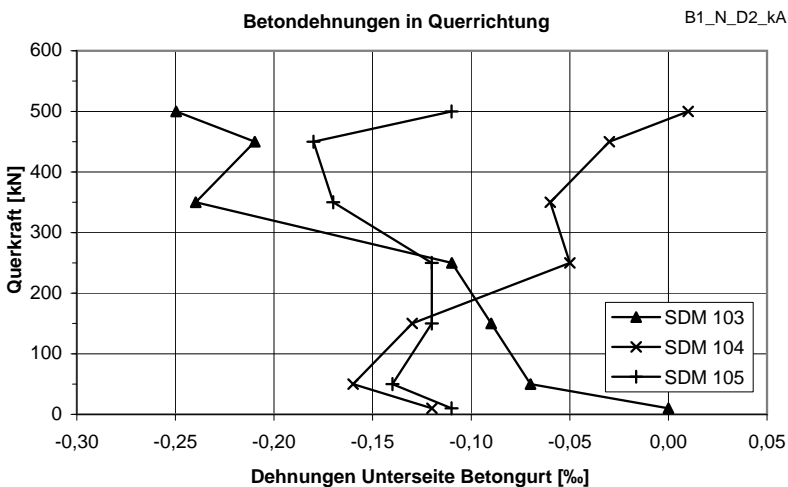
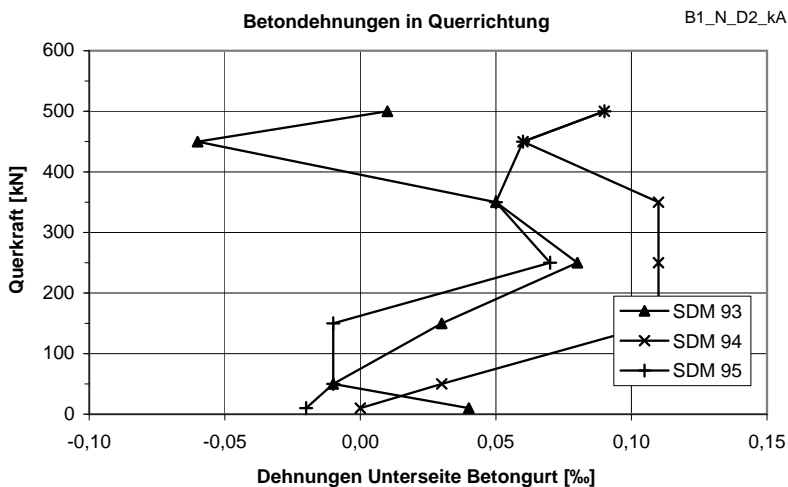
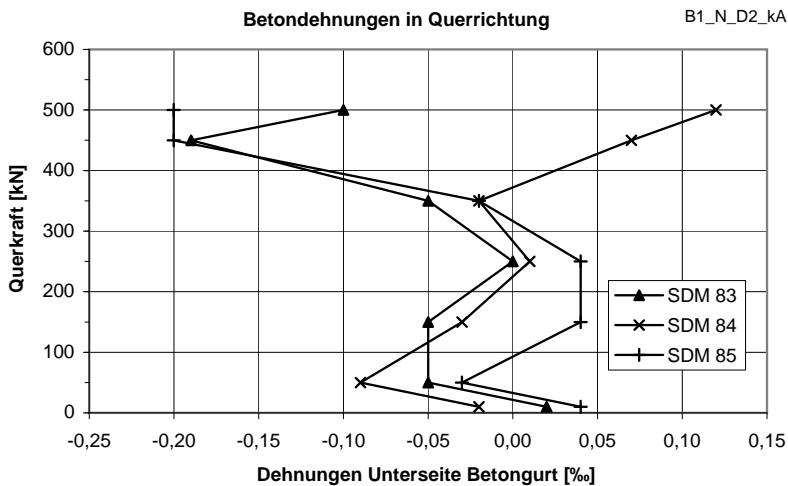


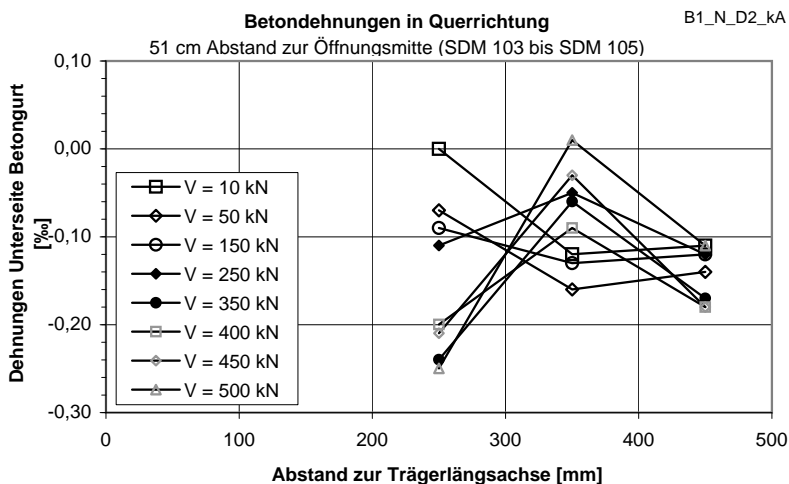
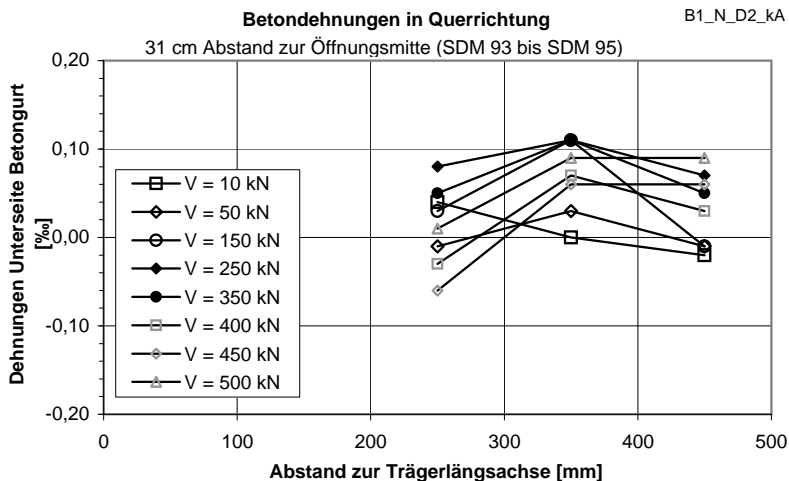
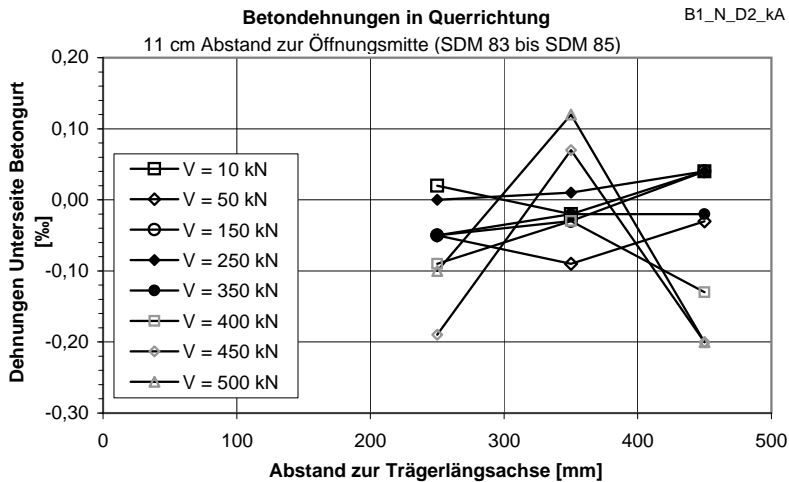






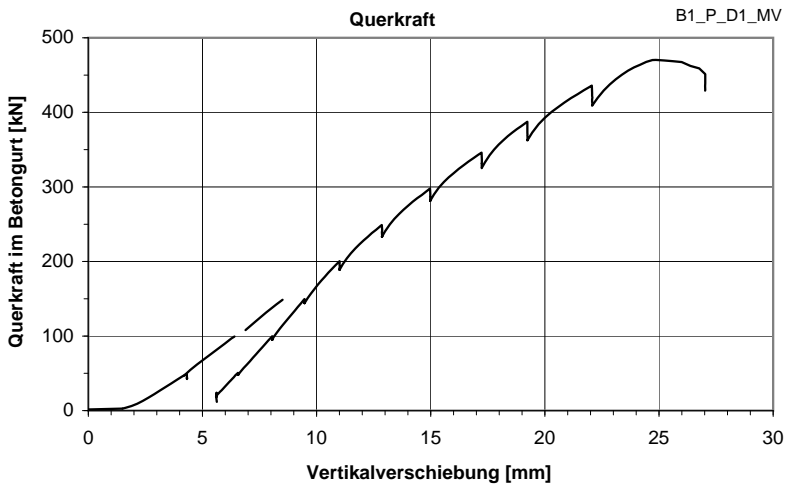
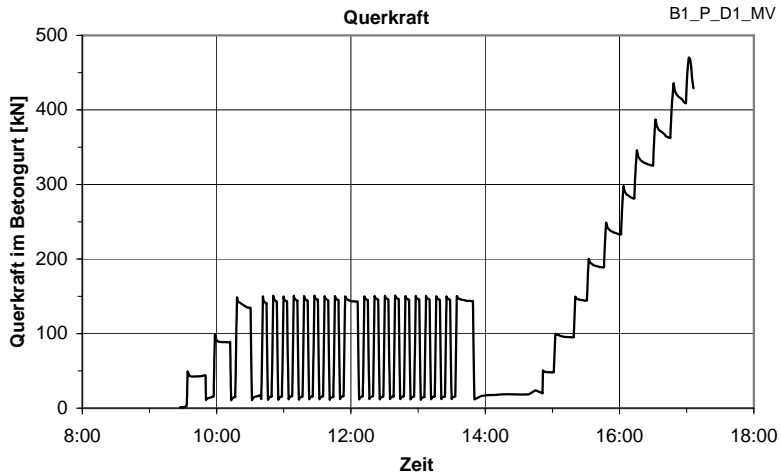


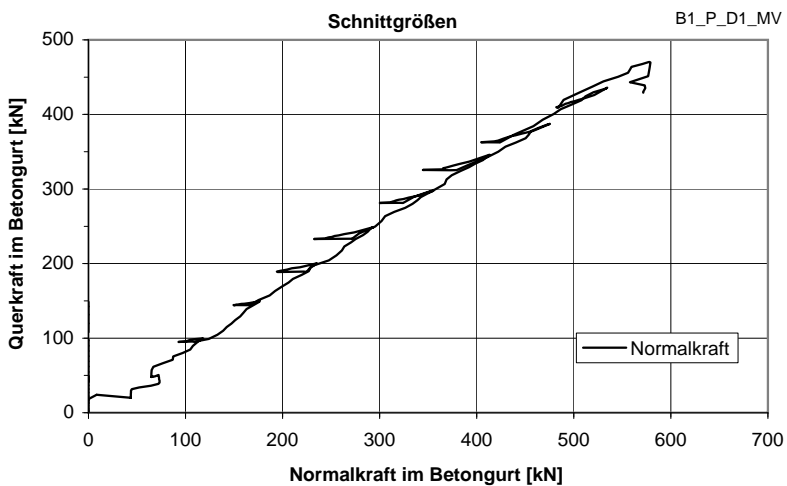
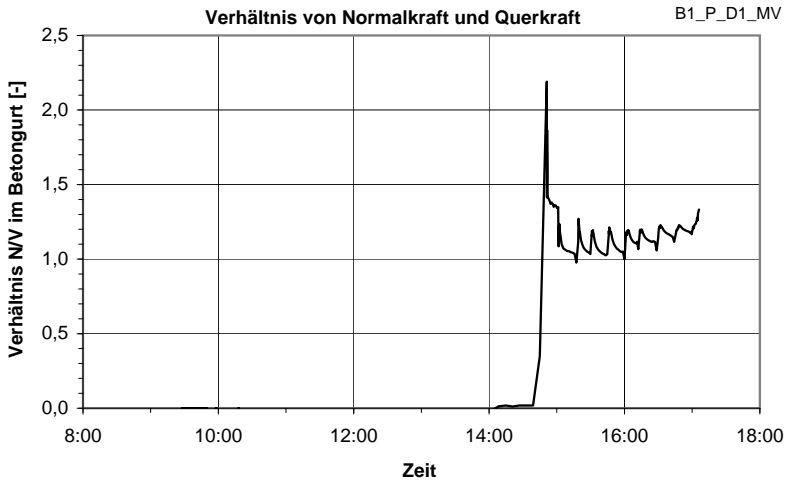
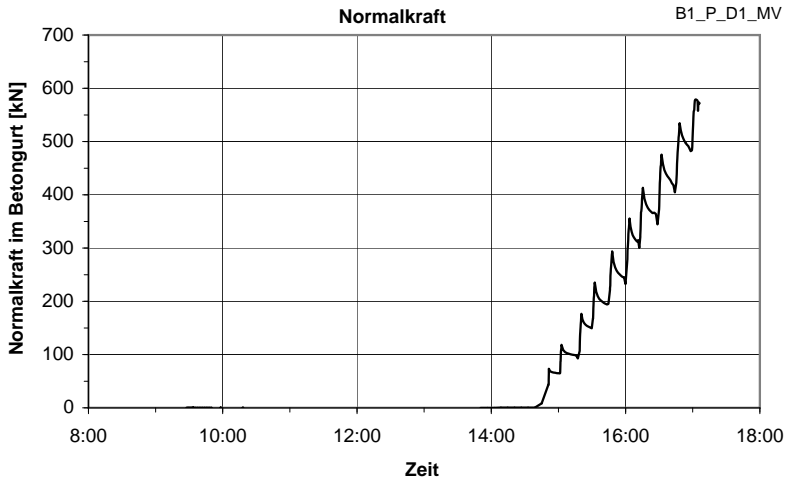


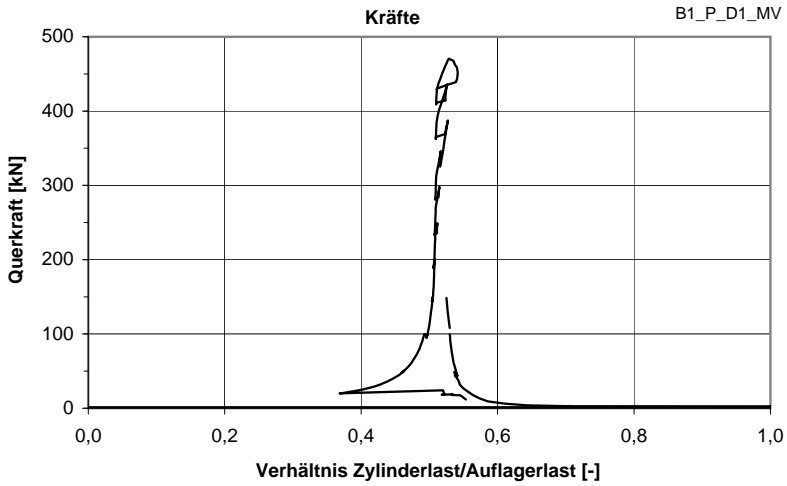
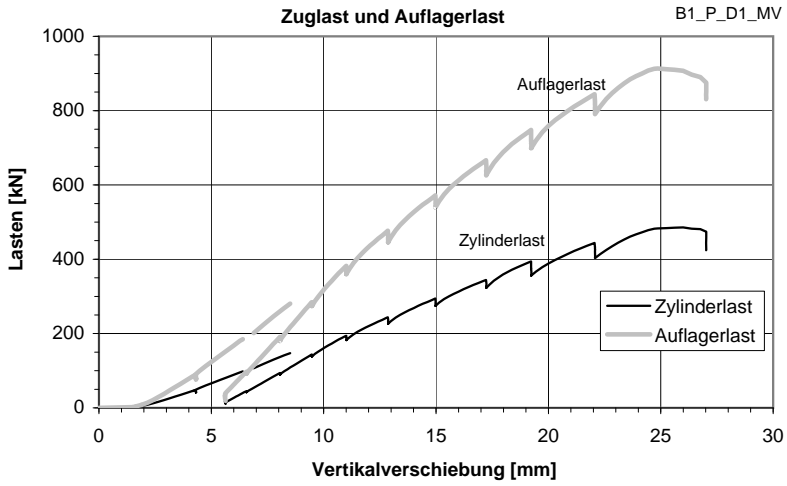


B.9. Versuch B1_P_D1_MV

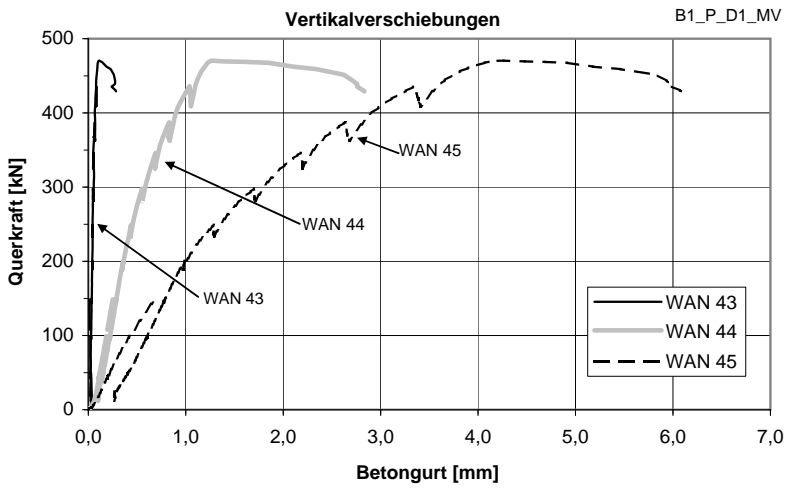
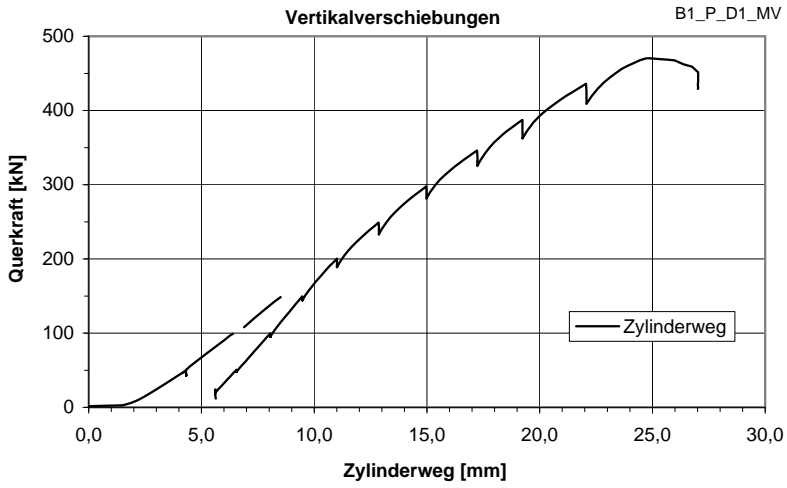
B.9.1. Kräfte

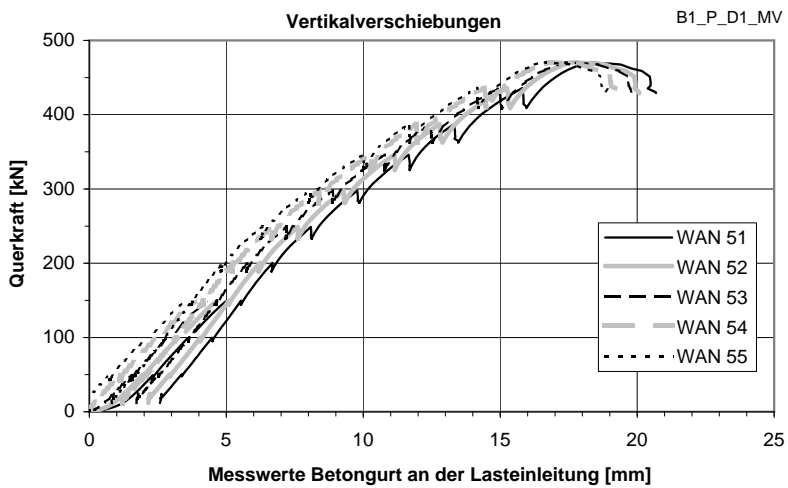
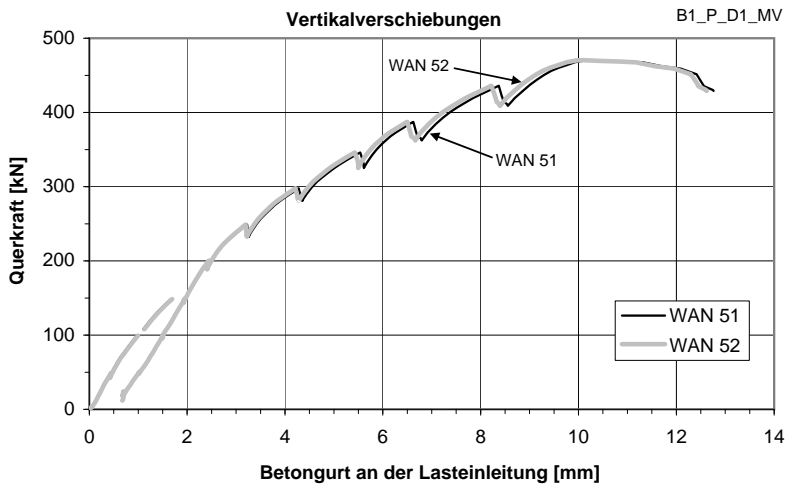
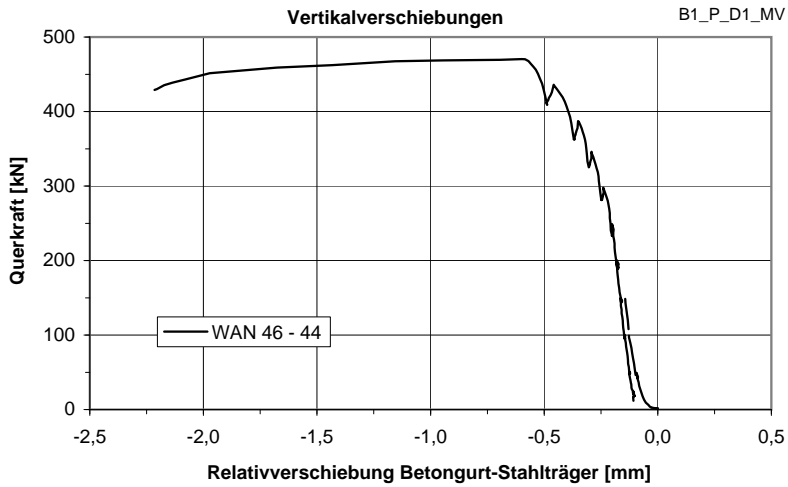




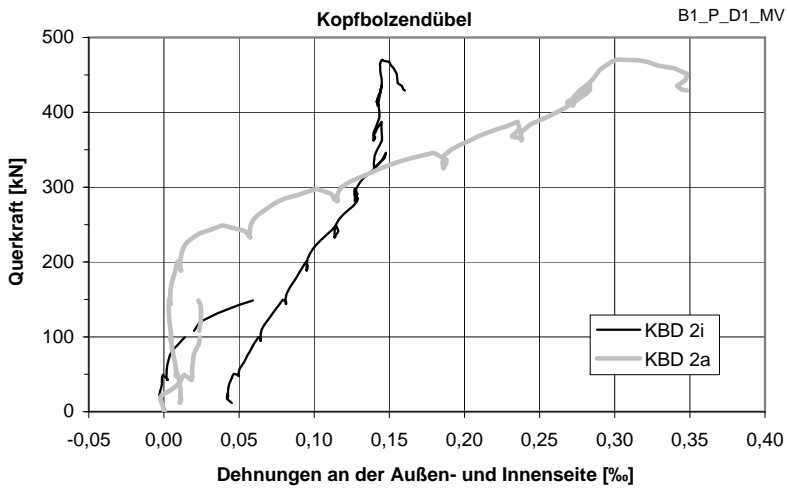
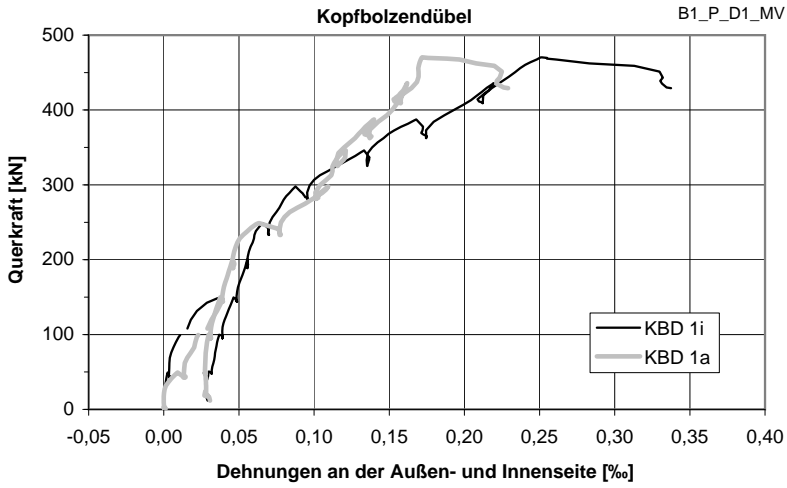


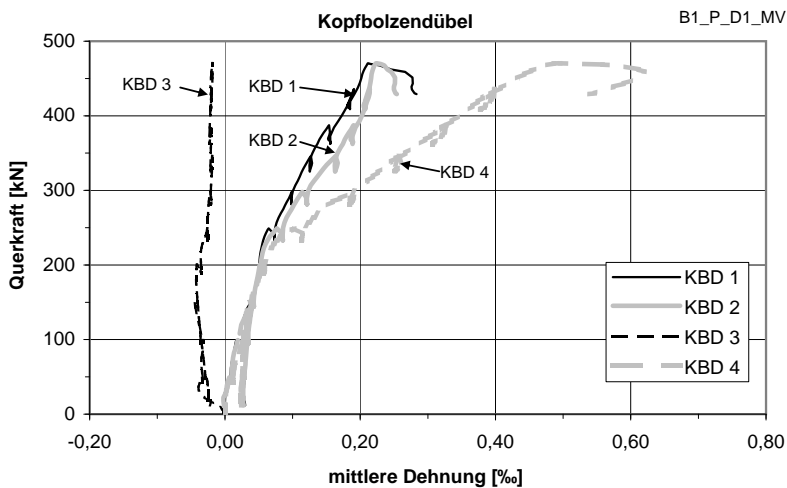
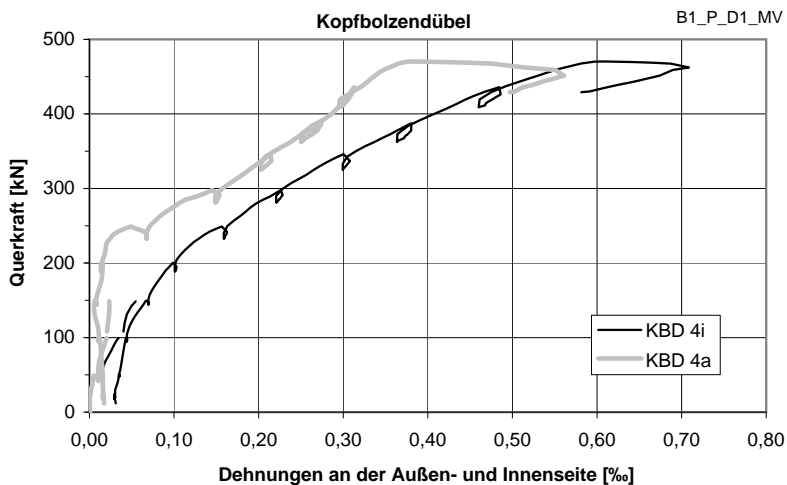
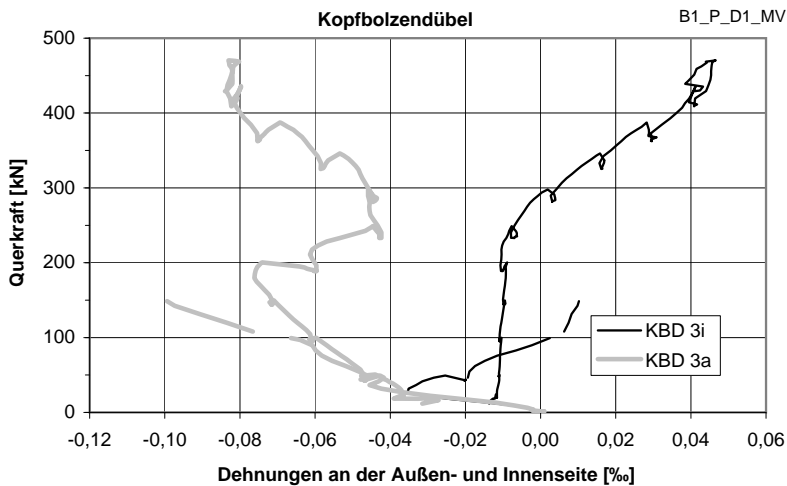
B.9.2. Verformungen

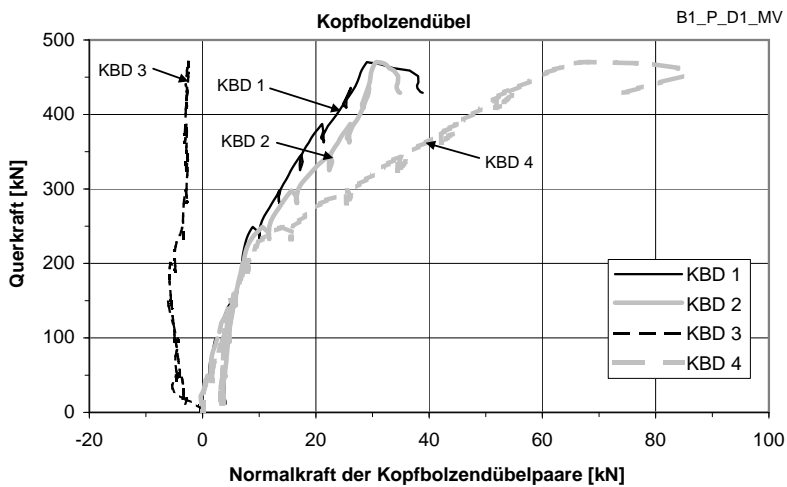
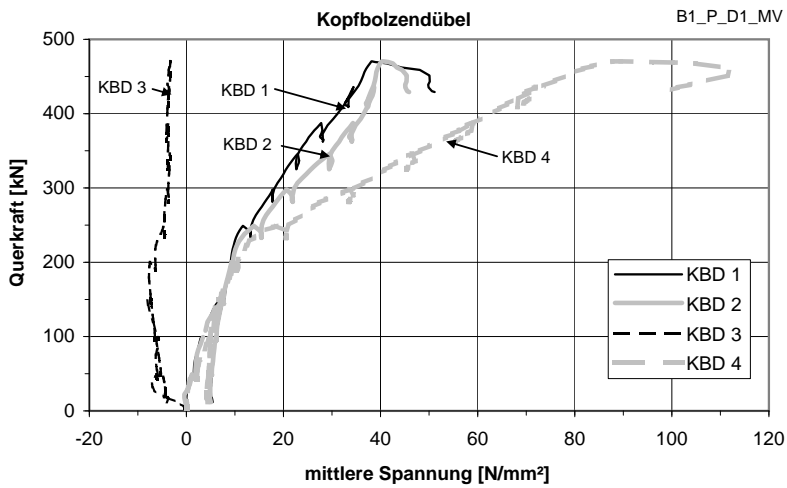




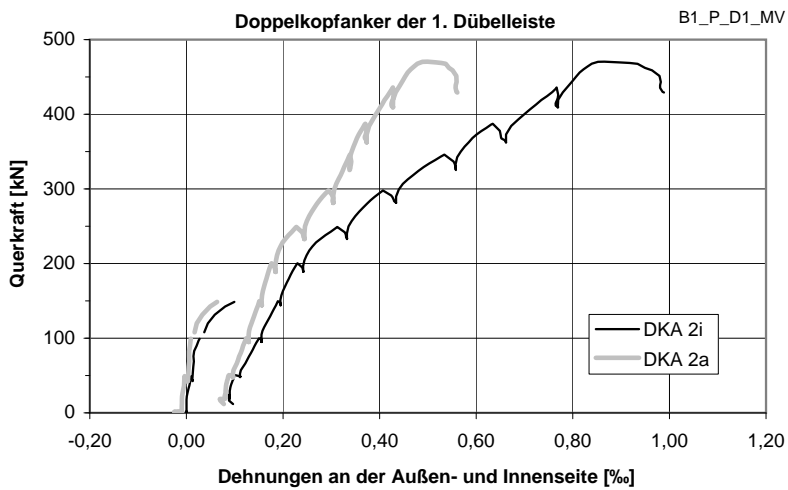
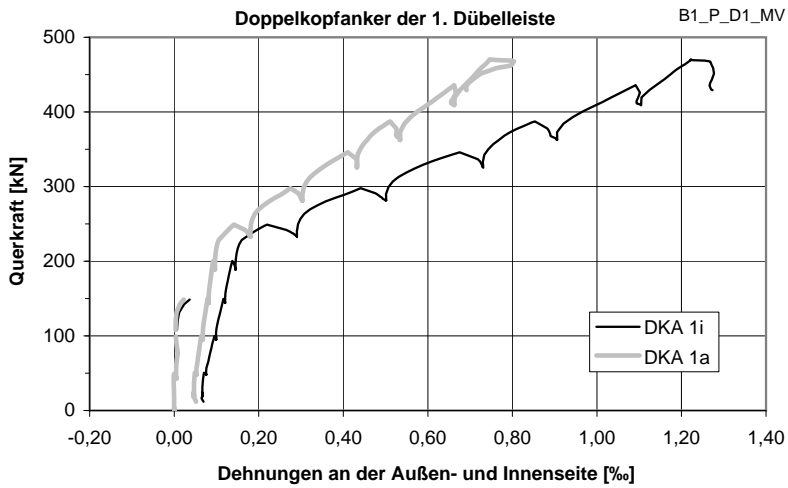
B.9.3. Kopfbolzendübel

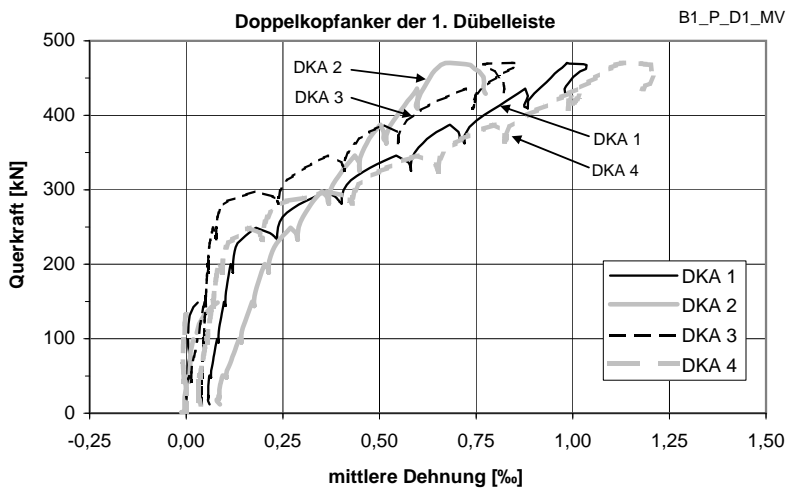
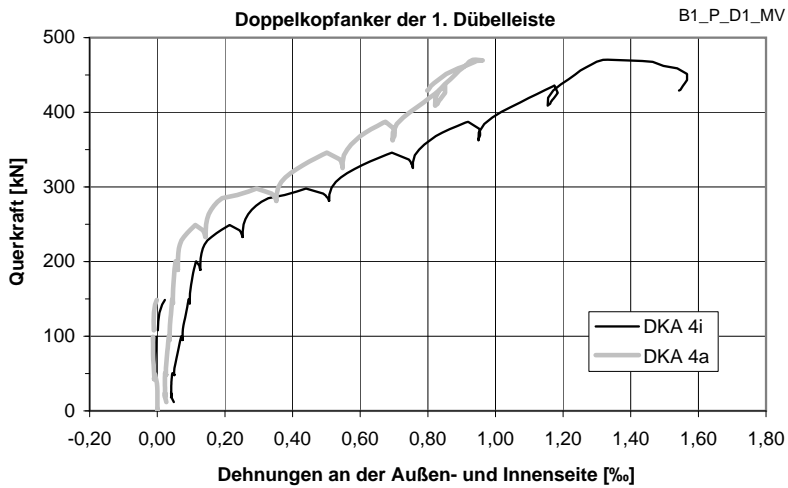
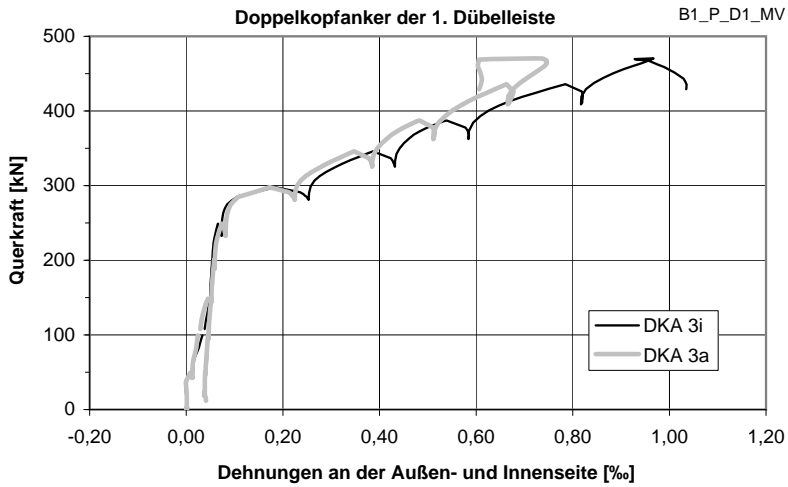


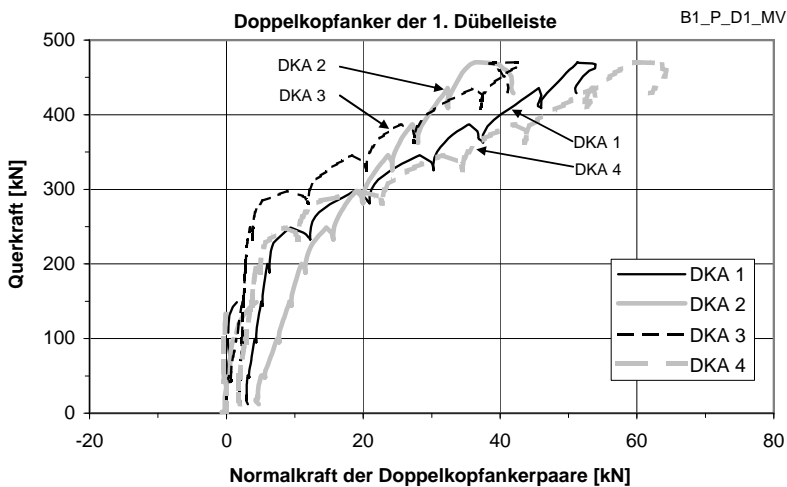
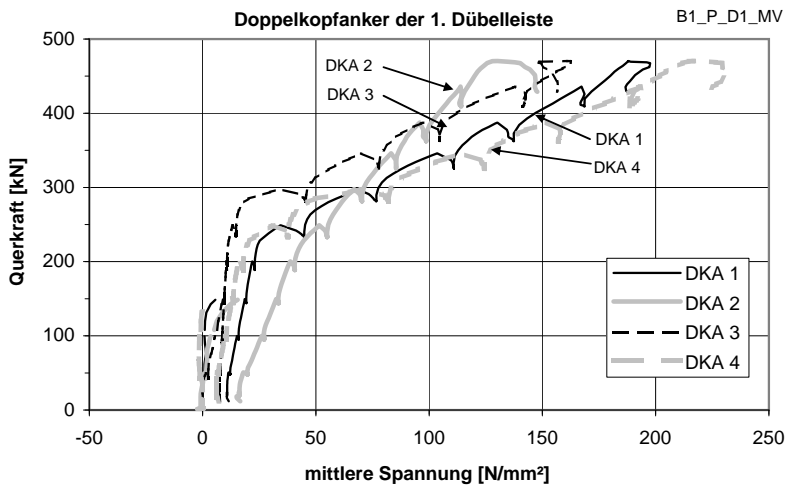




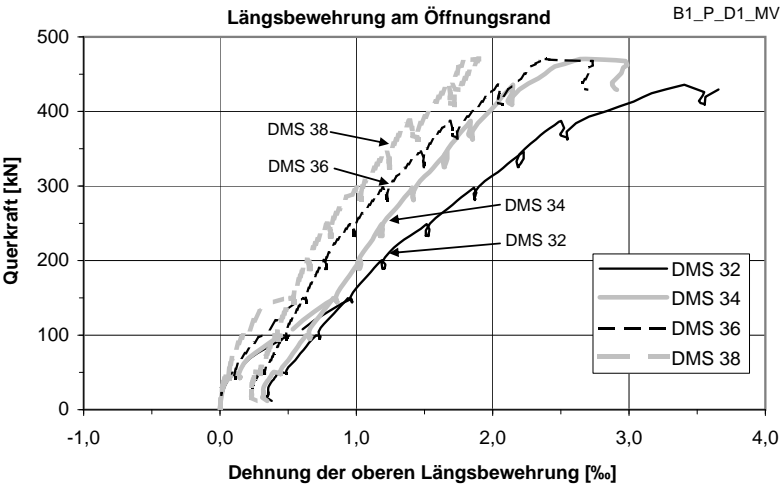
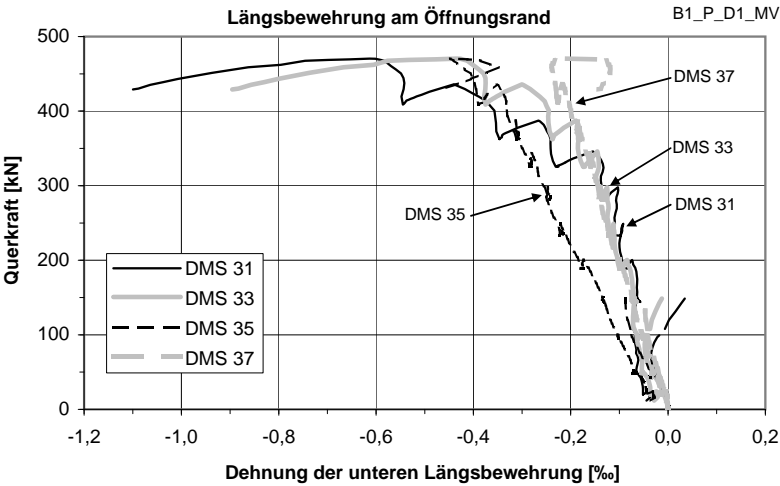
B.9.4. Doppelkopfkanker

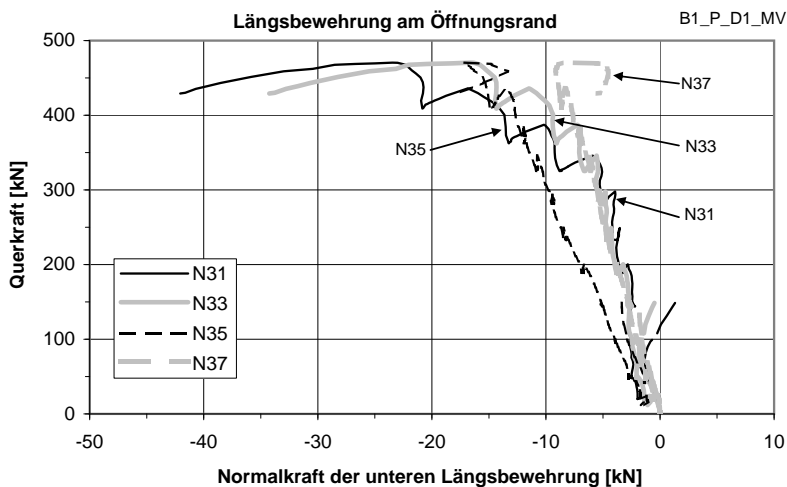
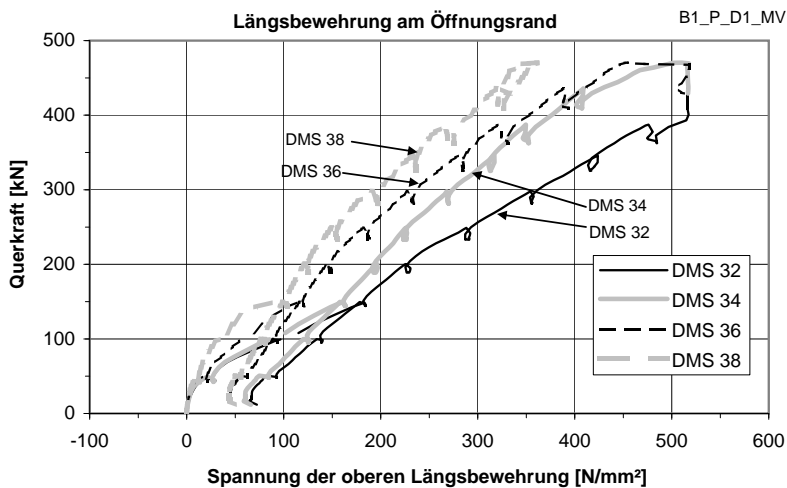
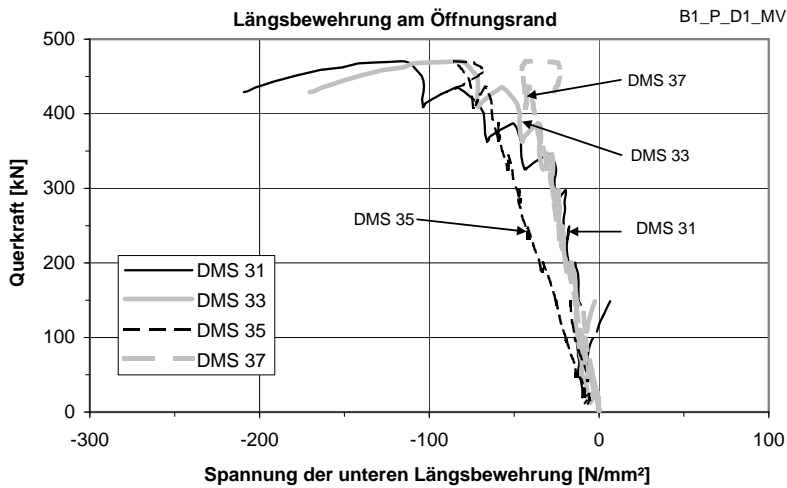


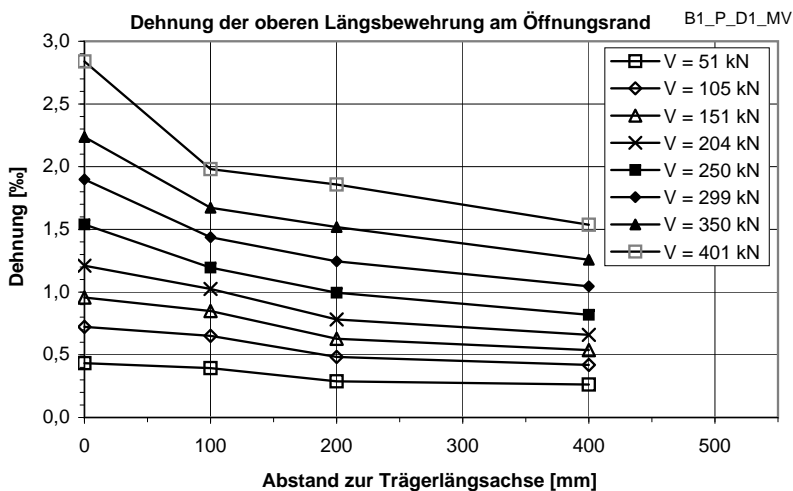
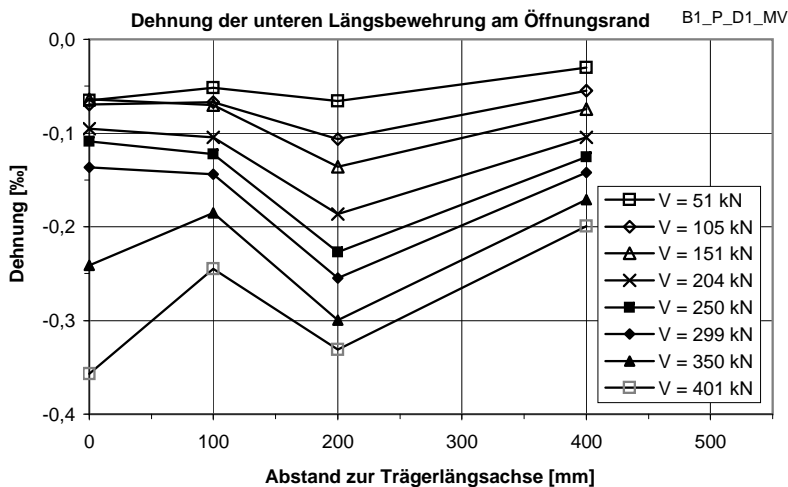
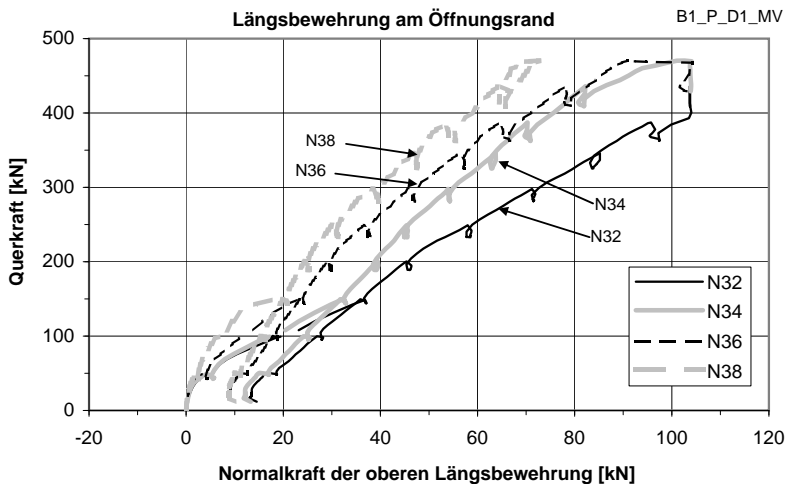


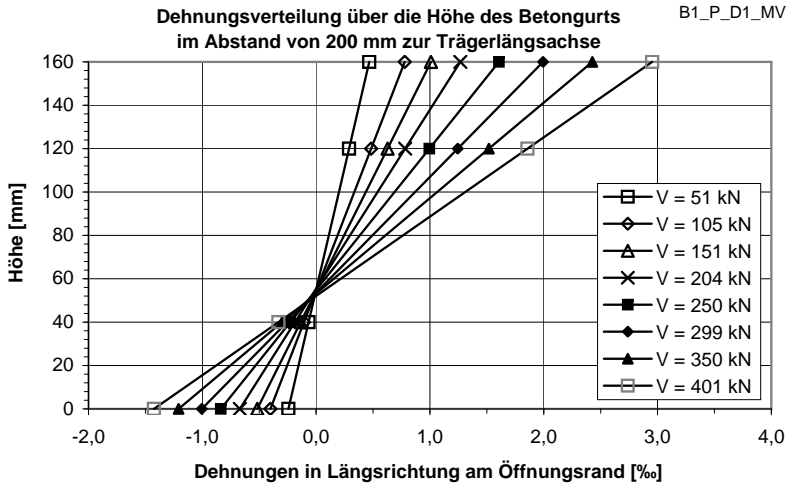
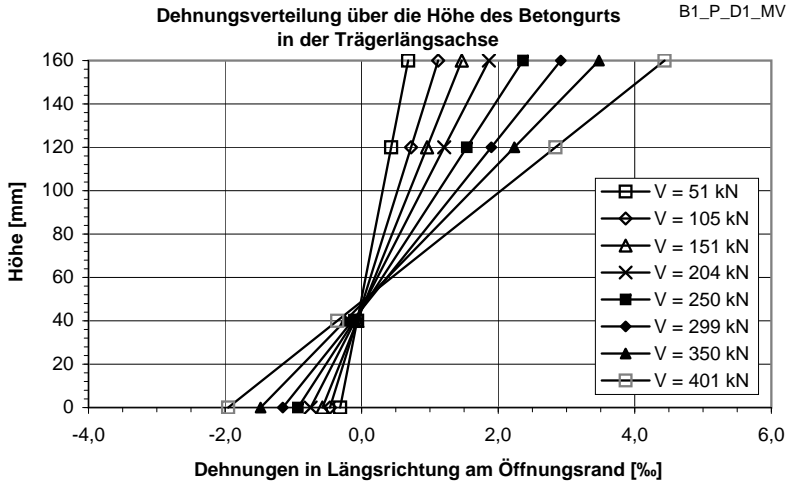


B.9.5. Längsbewehrung

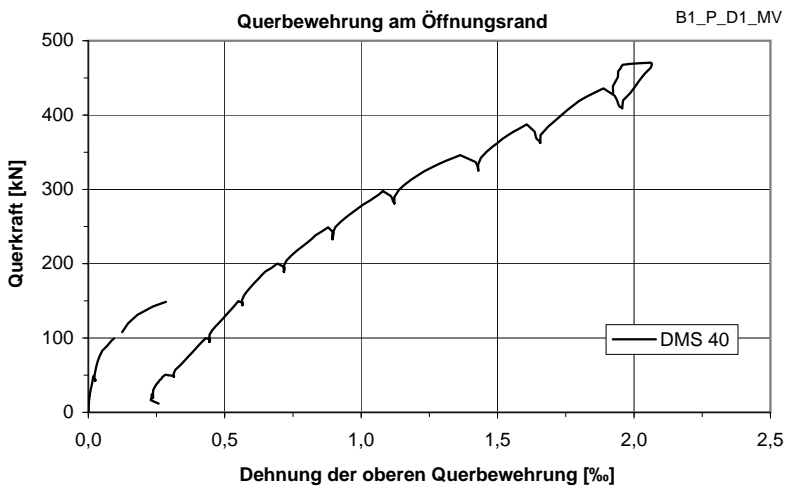
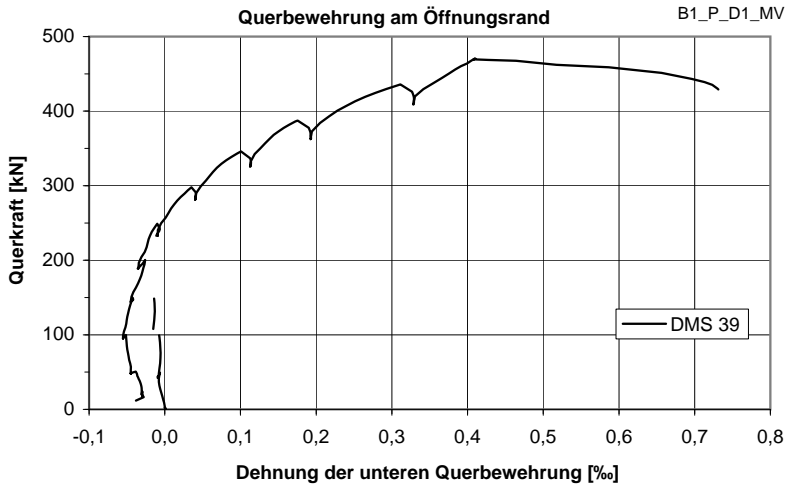


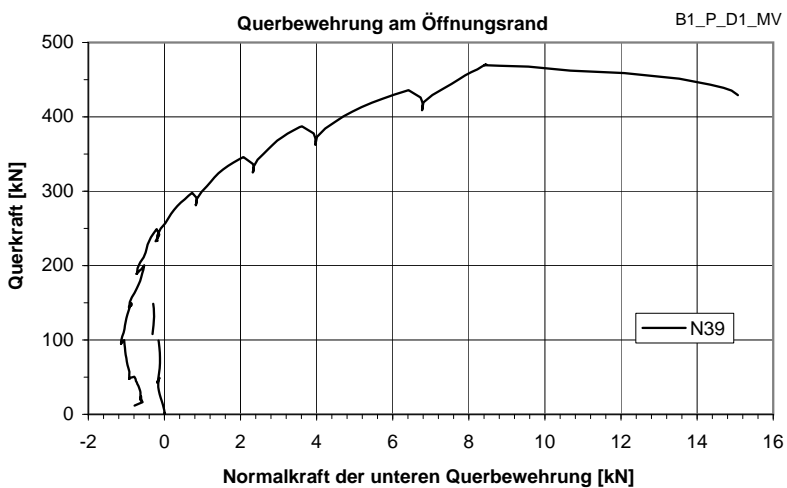
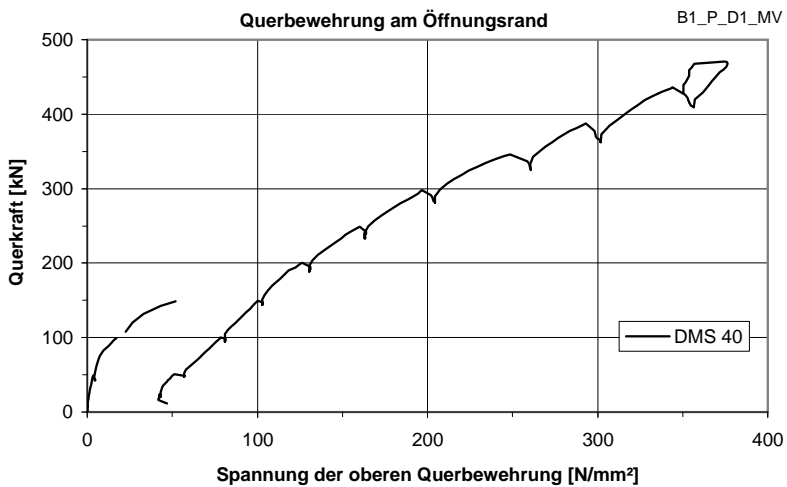
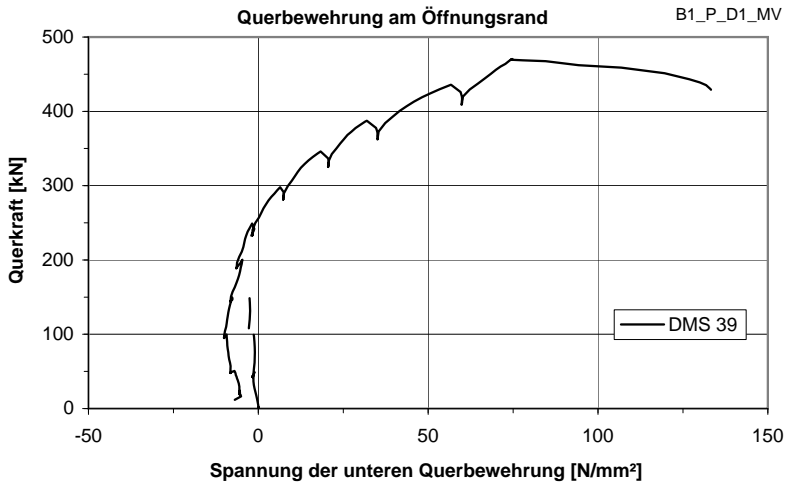


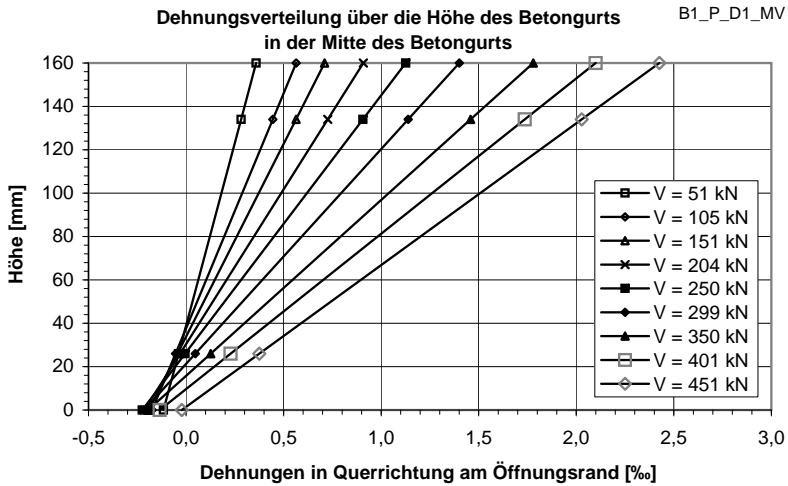
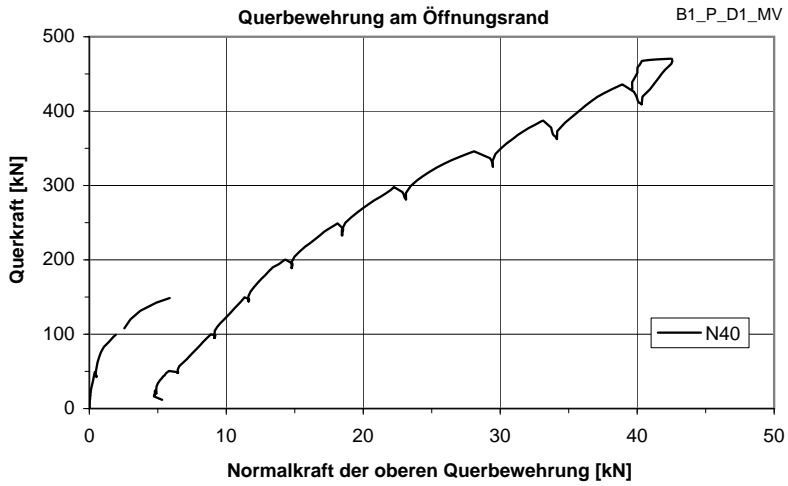




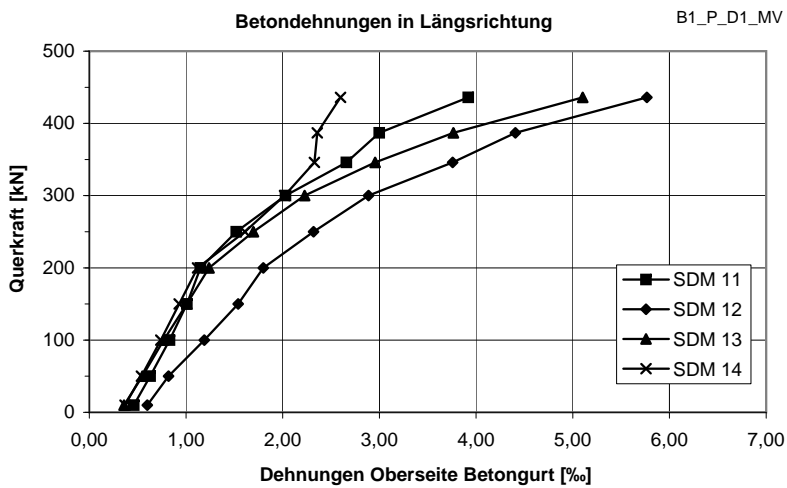
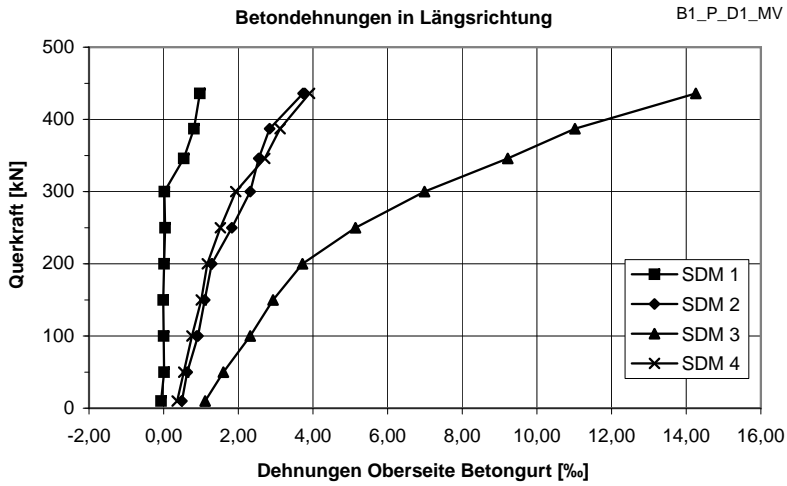
B.9.6. Querbewehrung

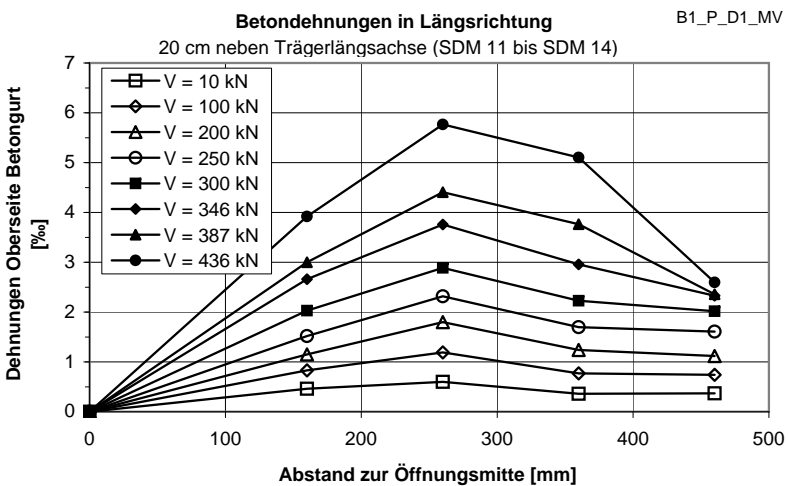
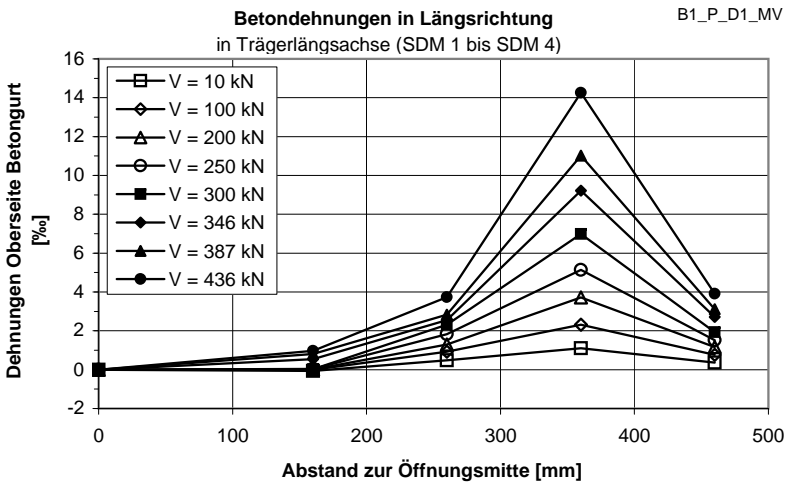
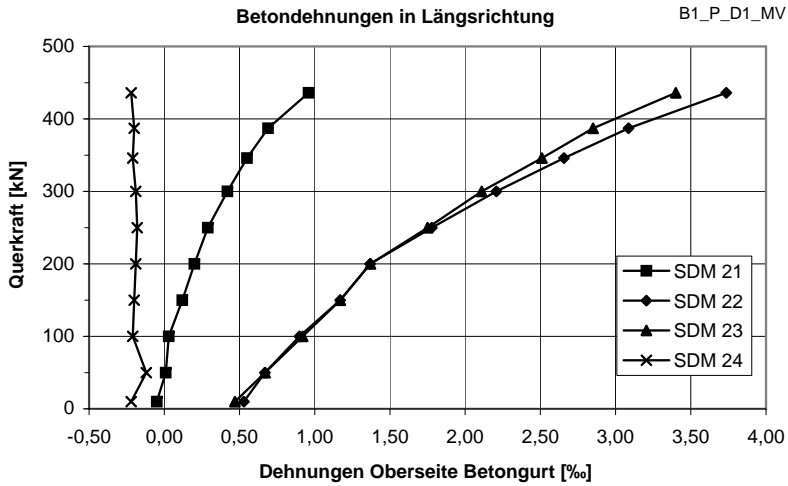


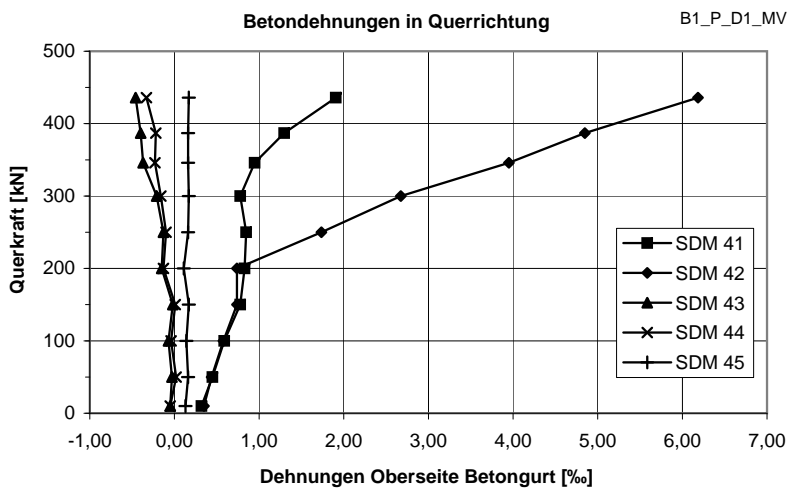
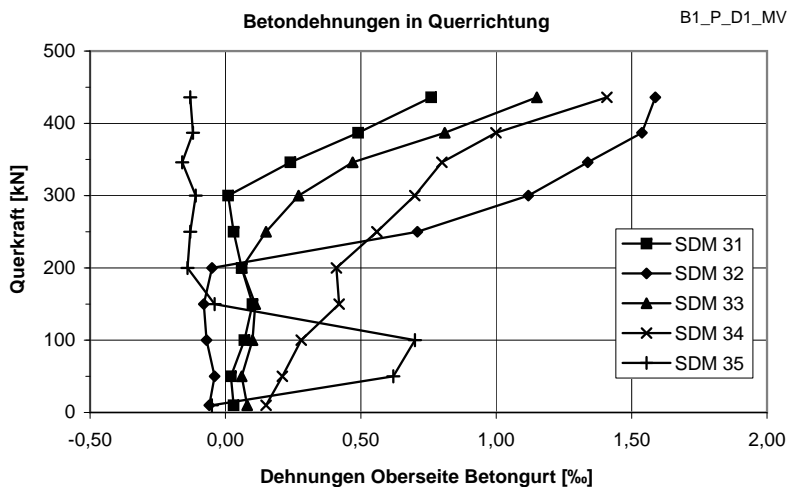
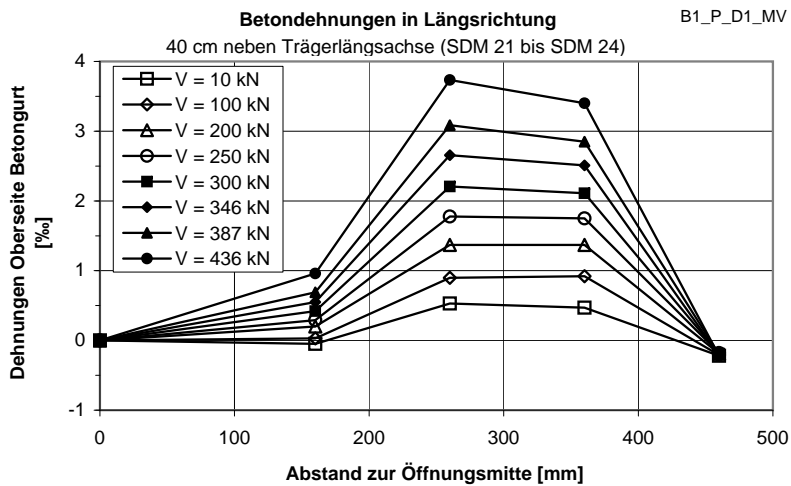


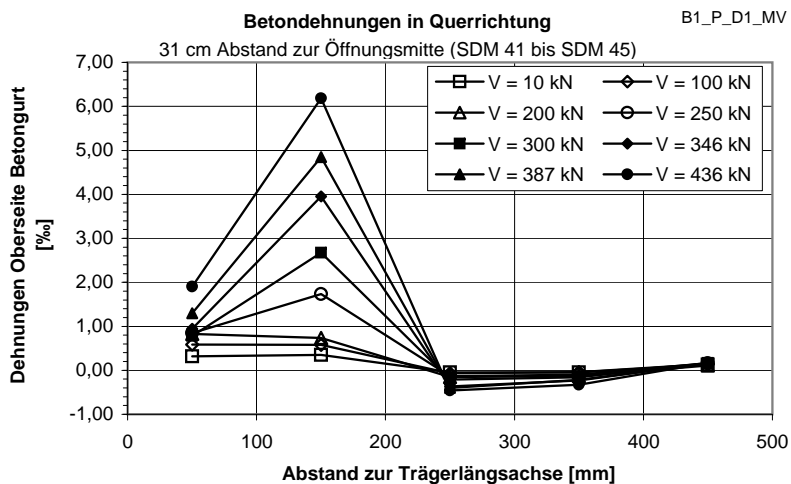
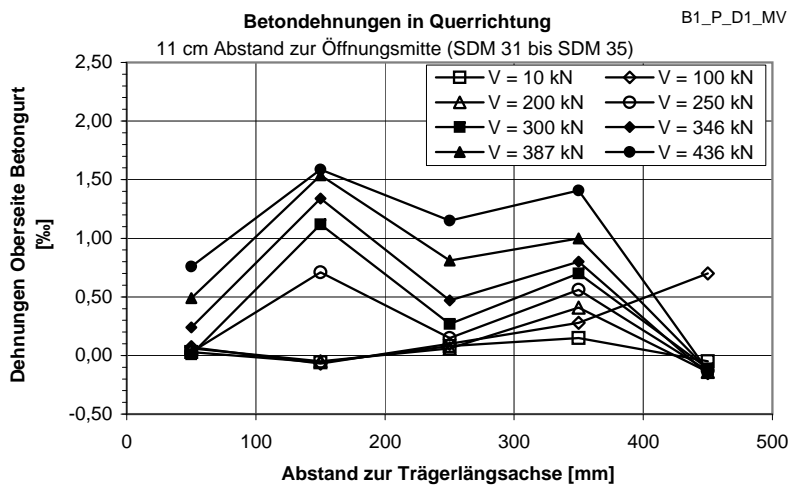
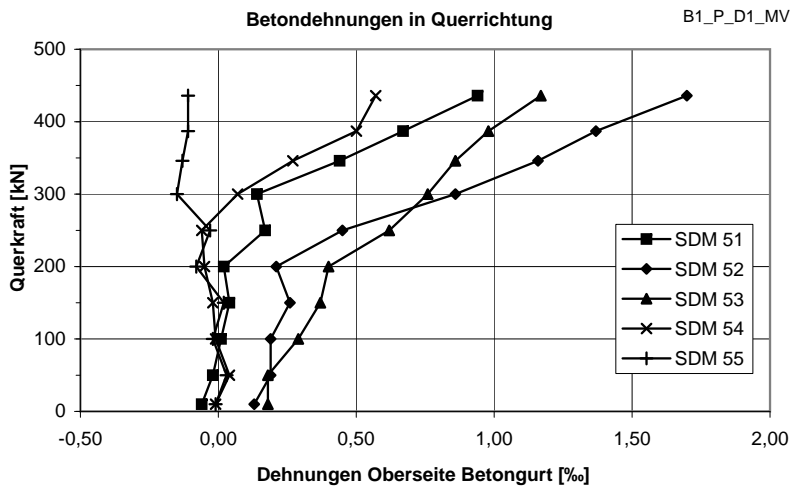


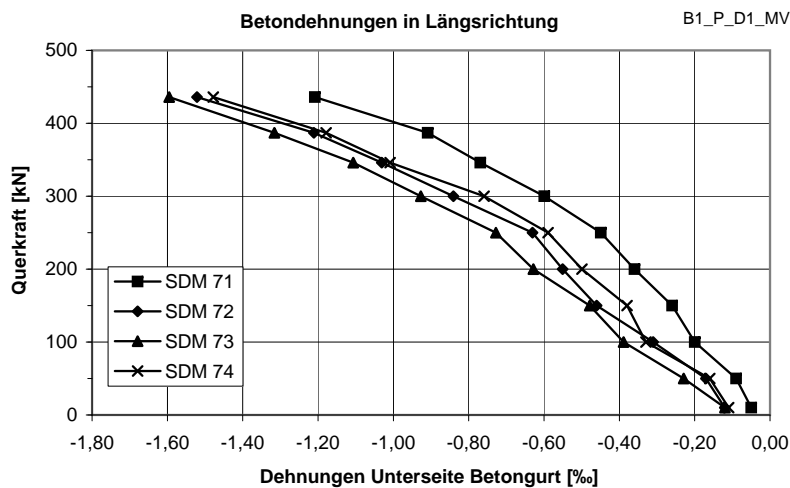
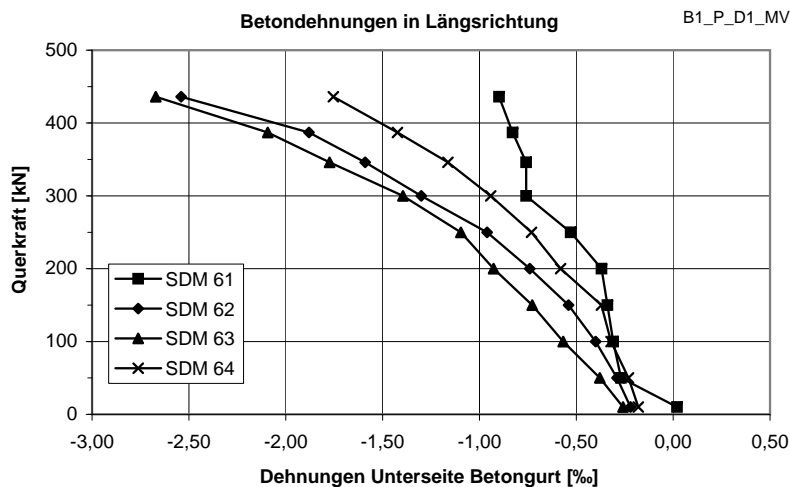
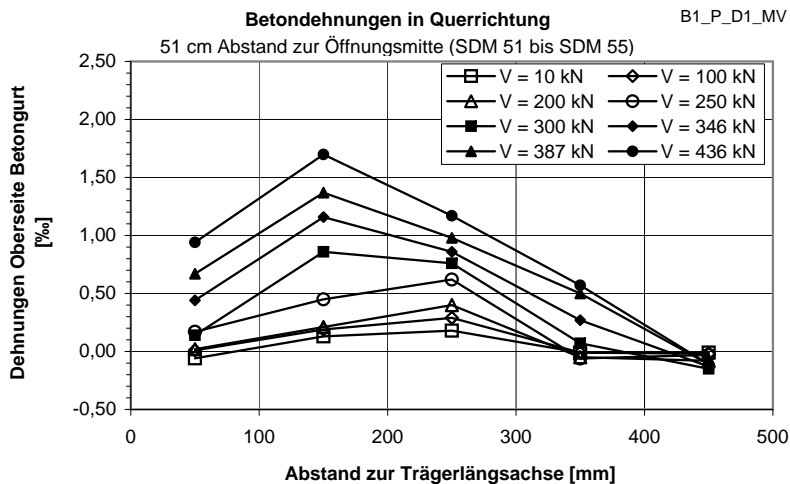
B.9.7. Betondehnungen

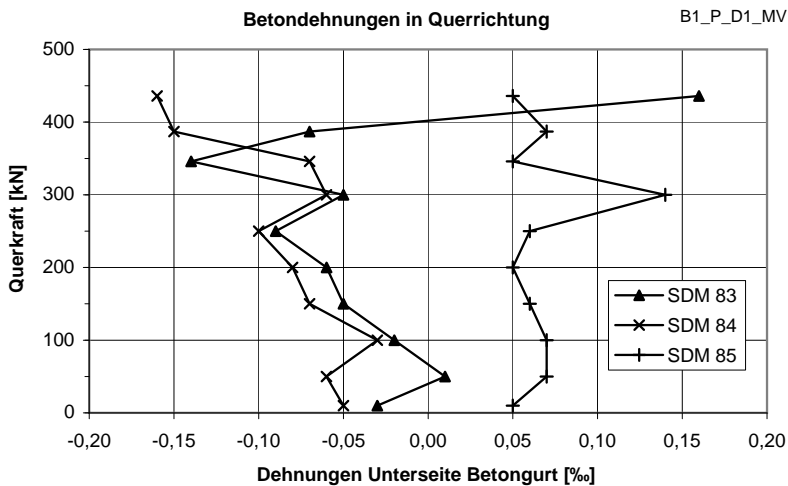
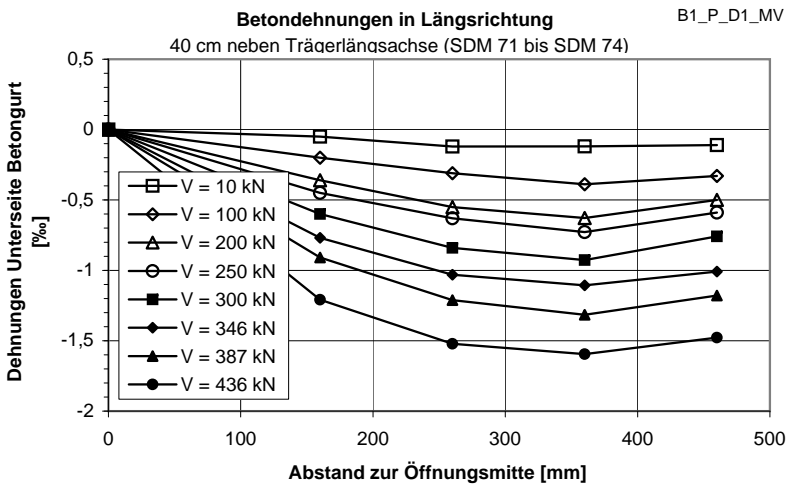
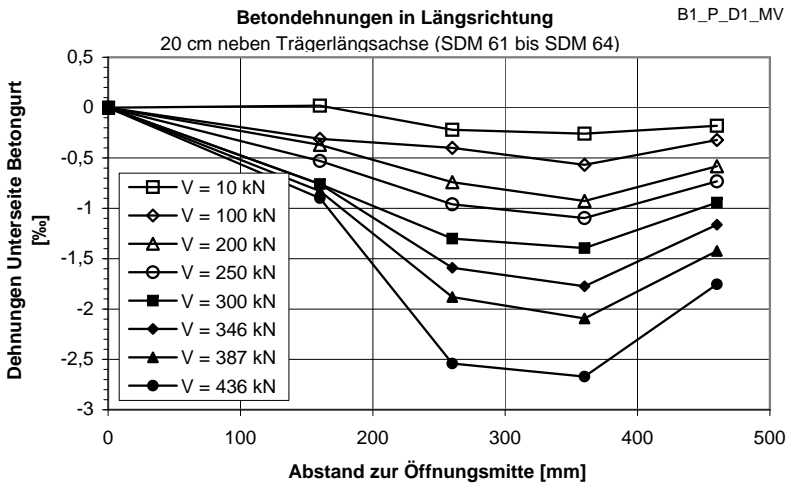


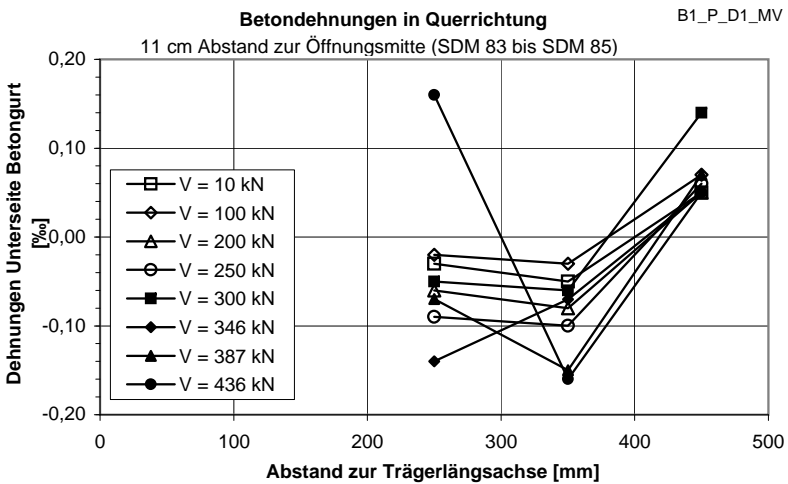
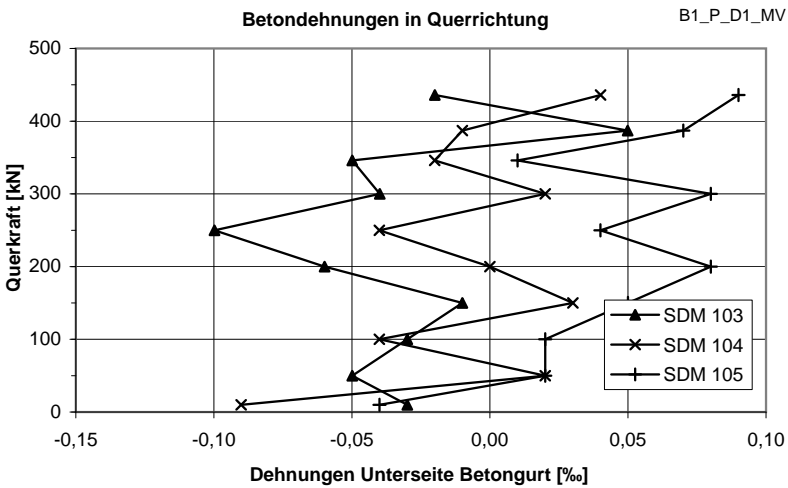
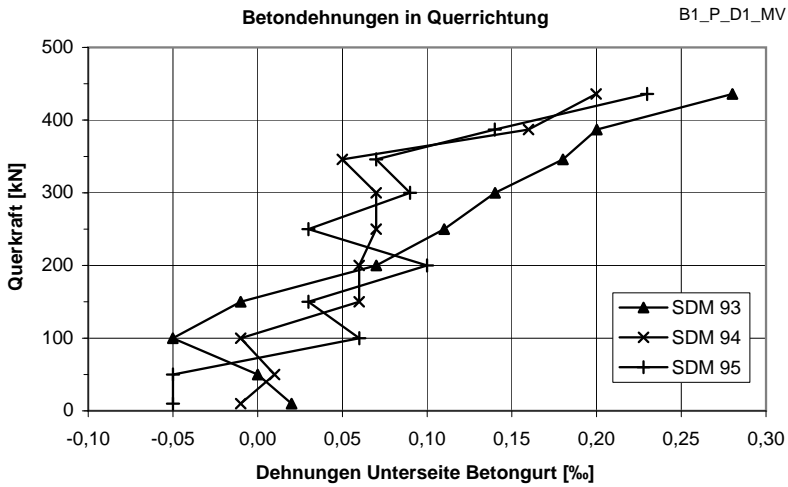


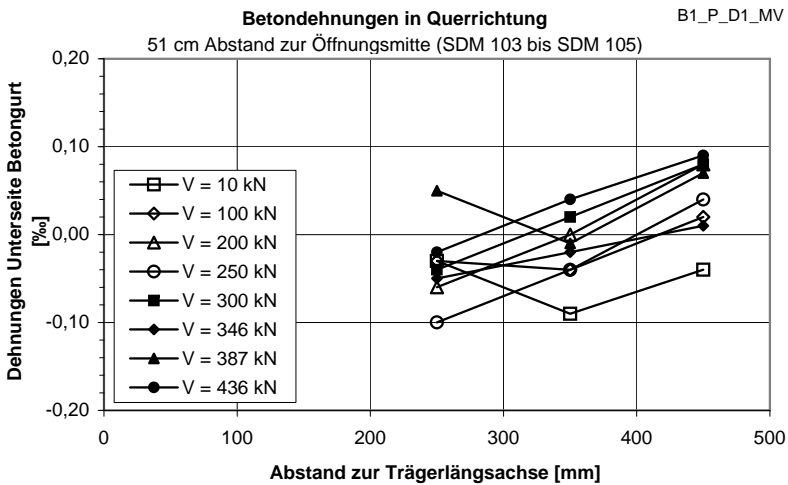
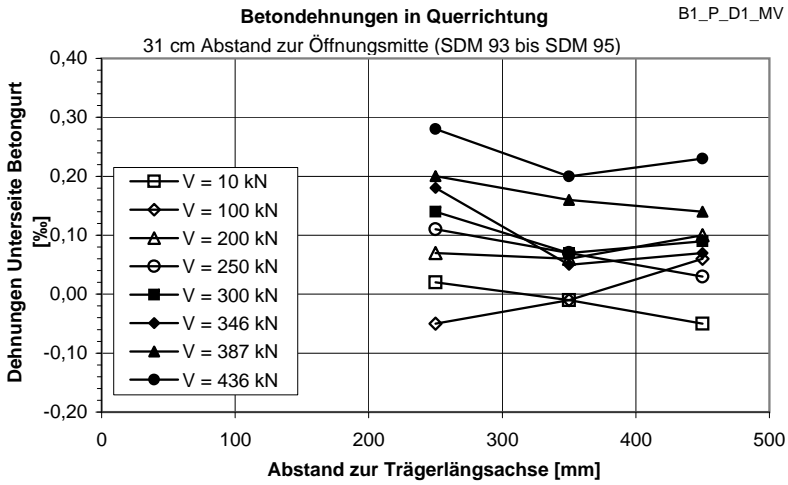






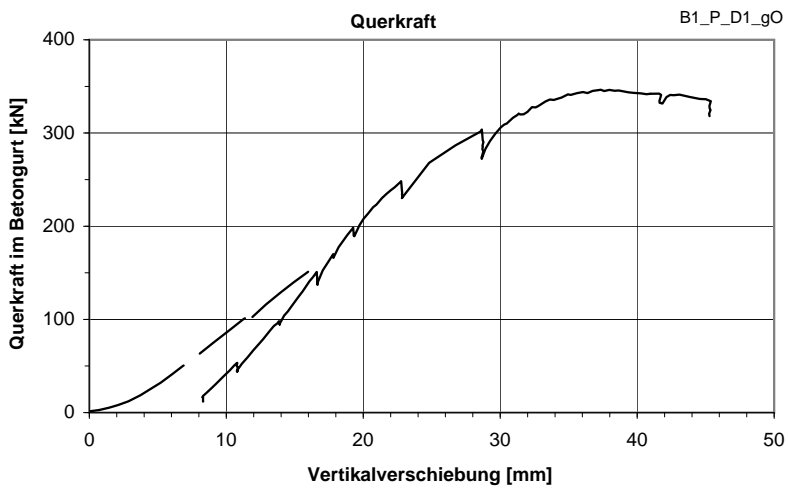
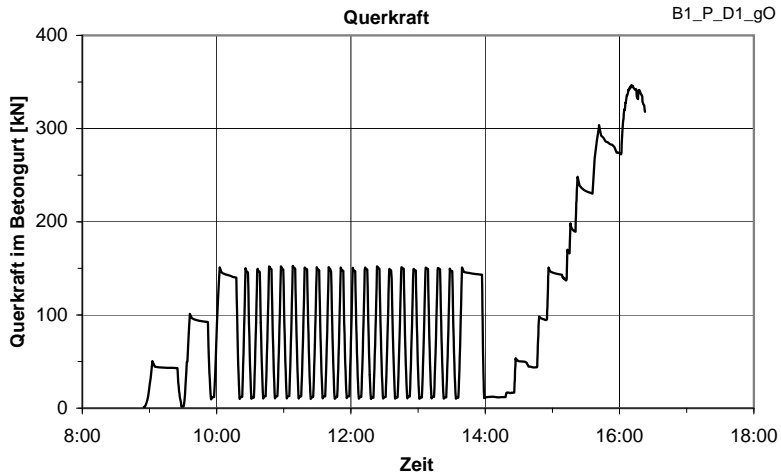


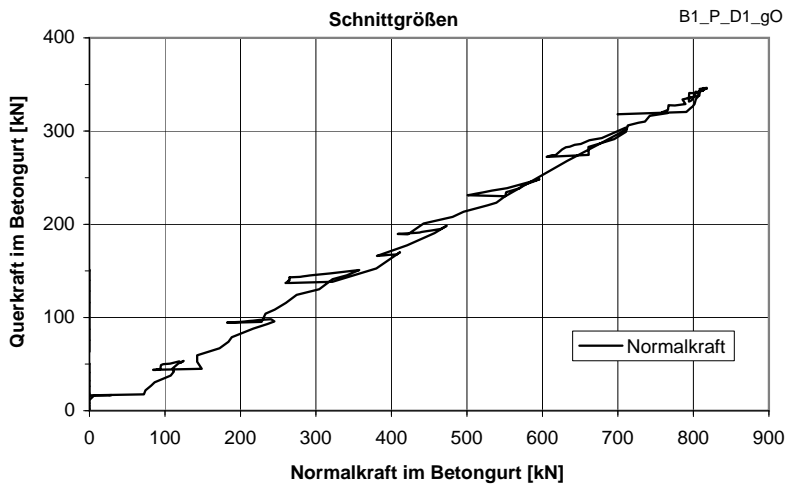
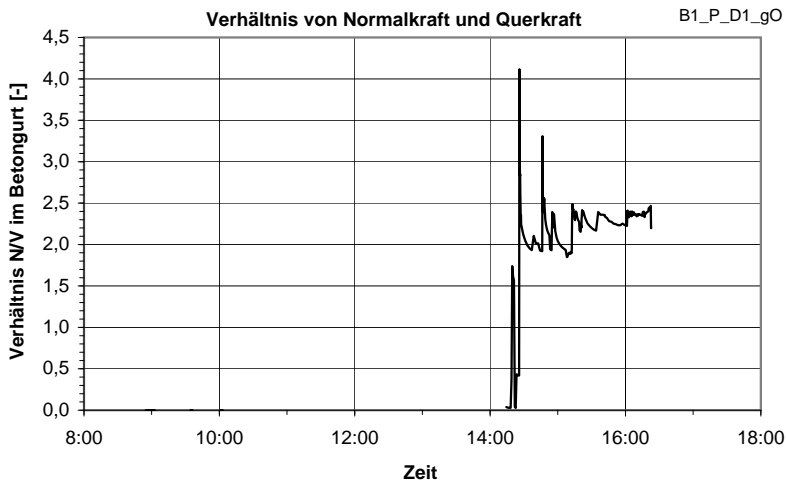
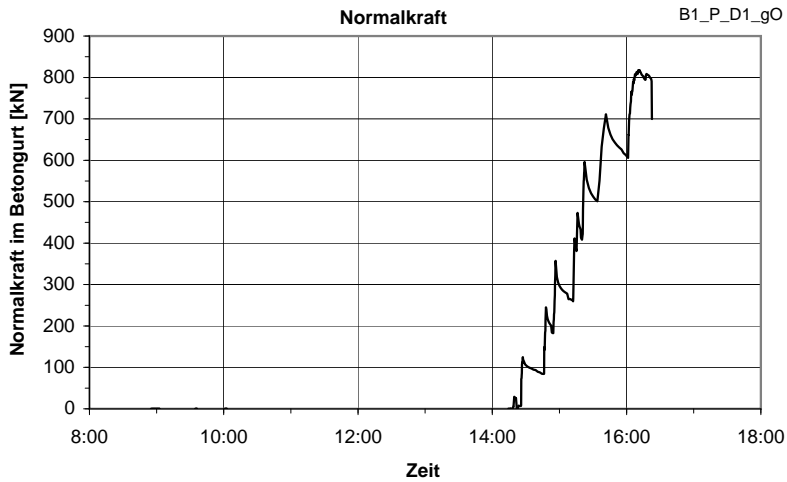


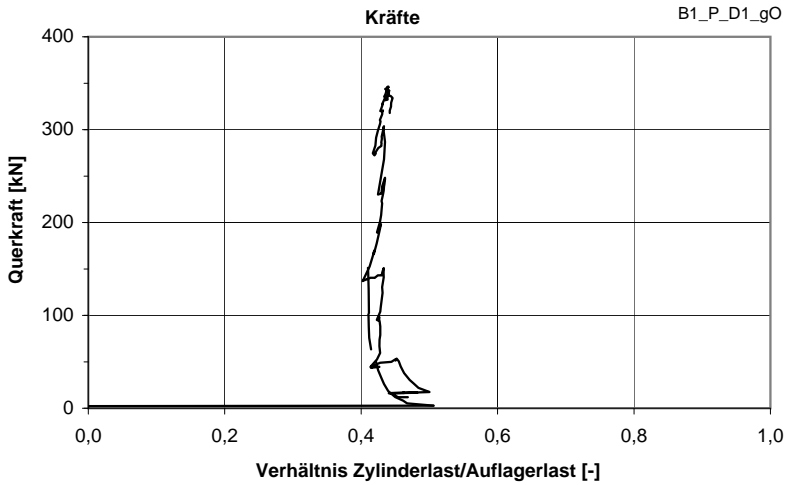
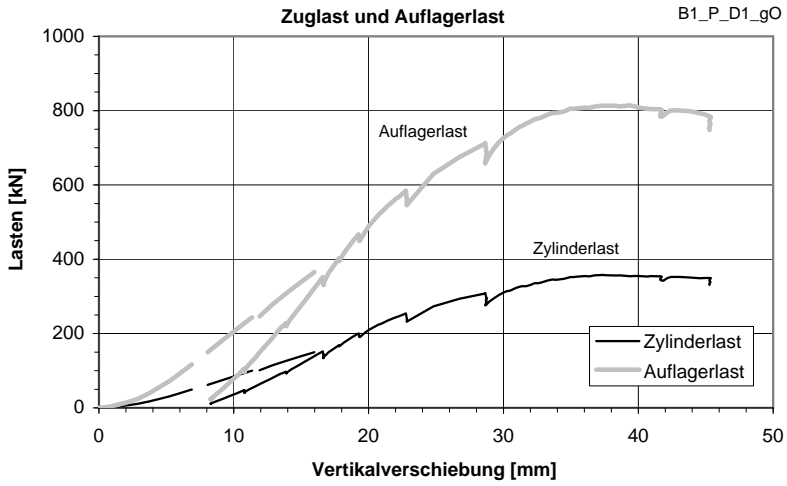


B.10. Versuch B1_P_D1_gO

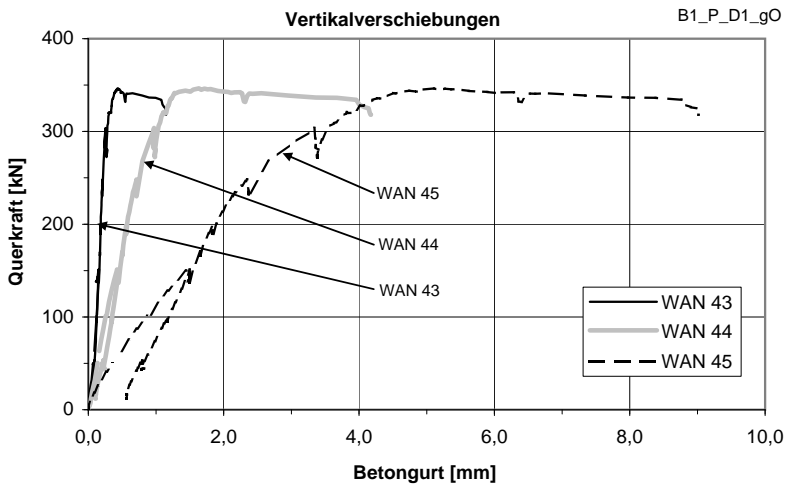
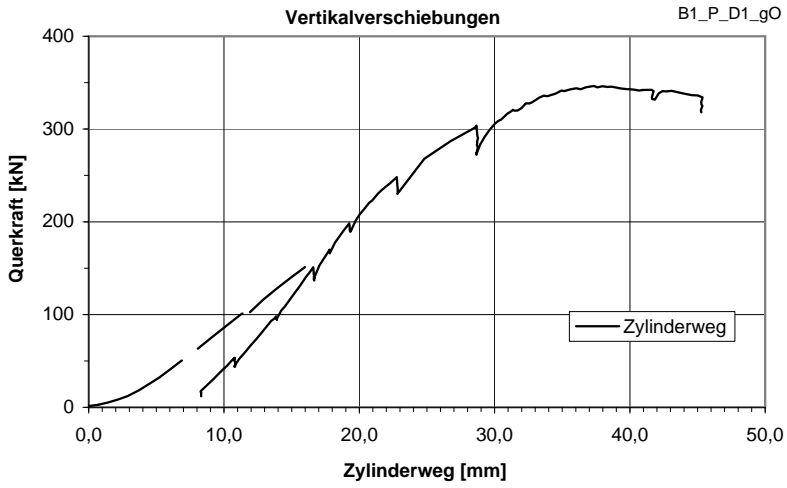
B.10.1. Kräfte

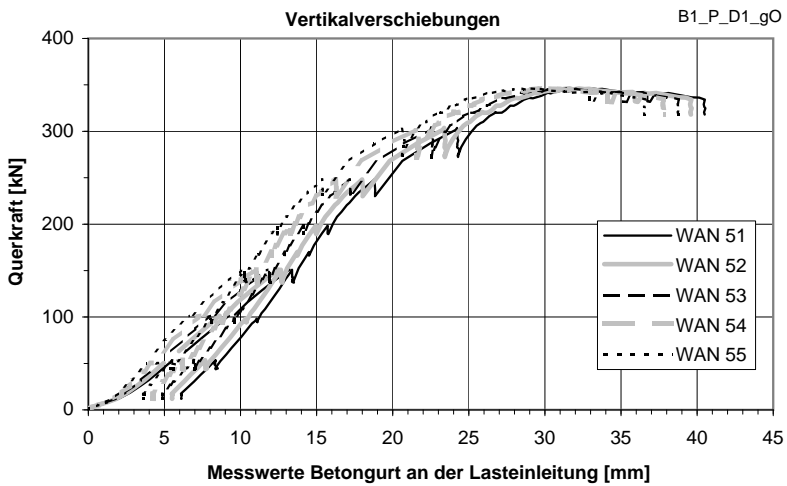
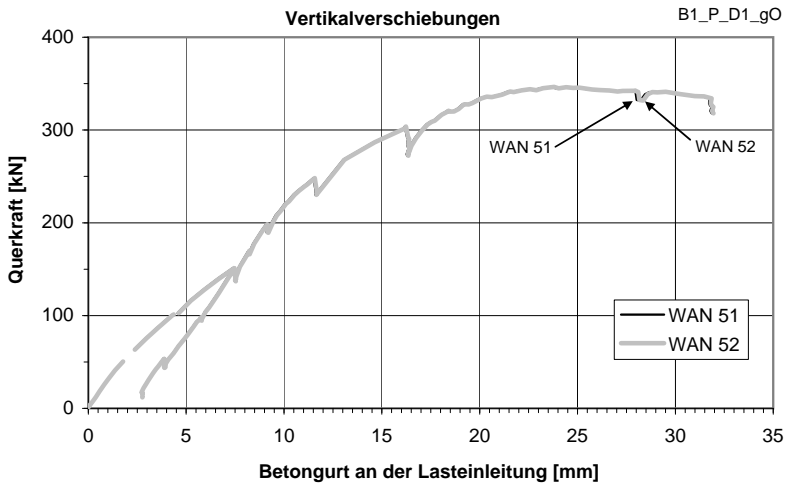
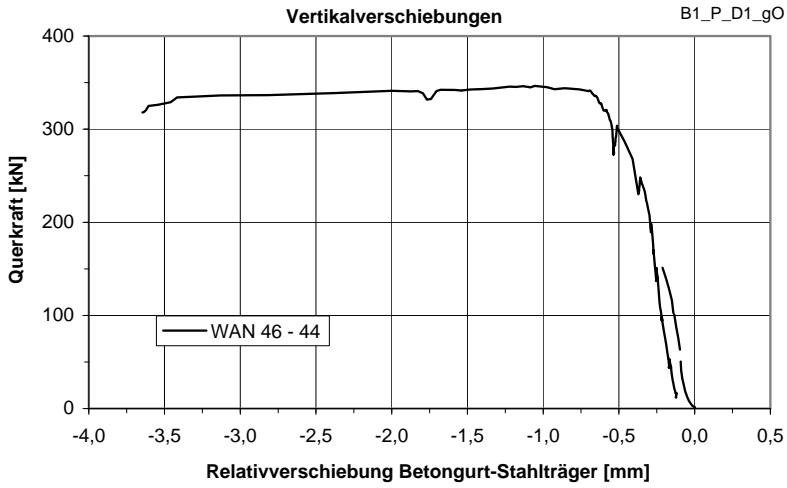




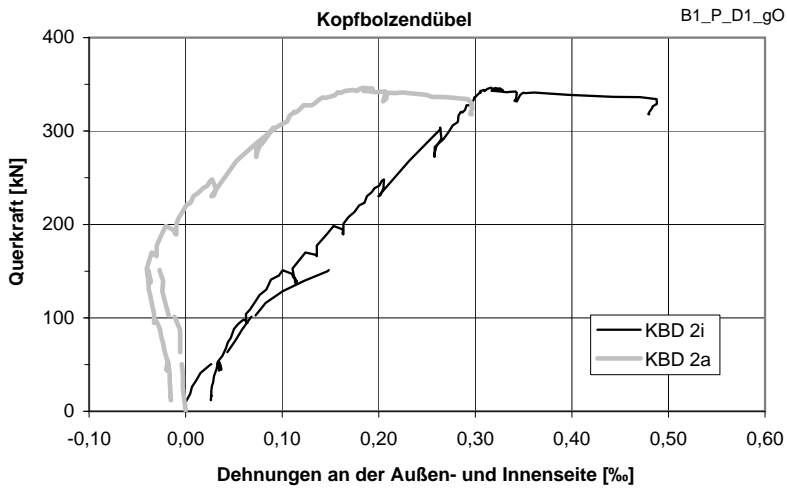
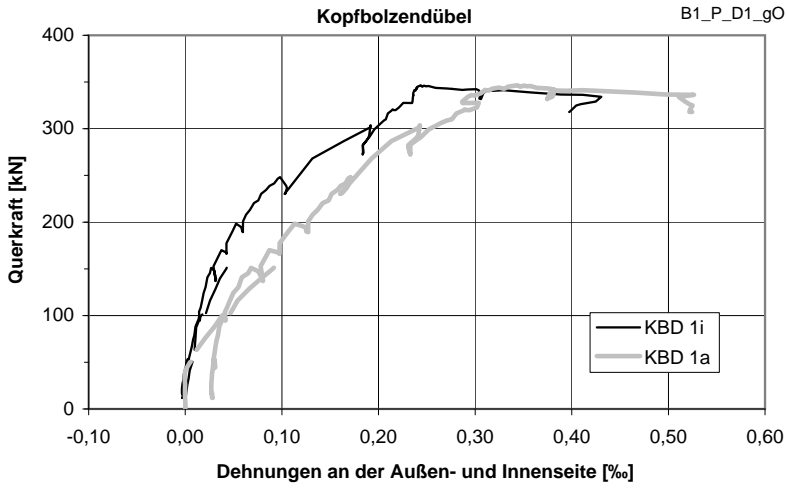


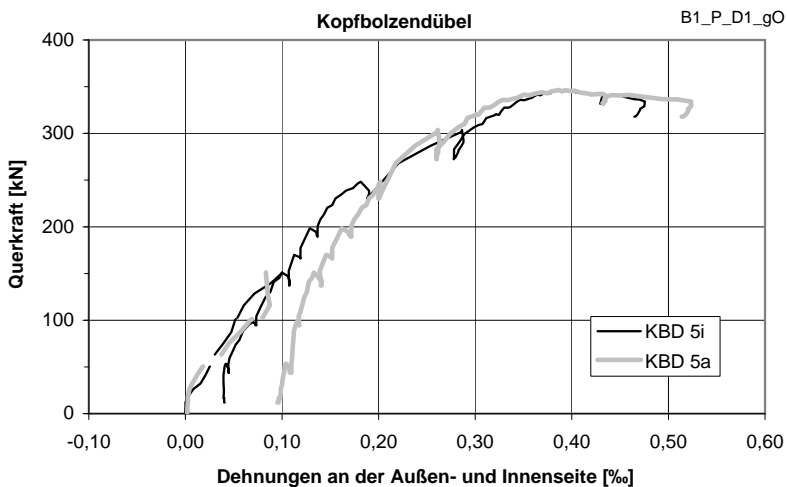
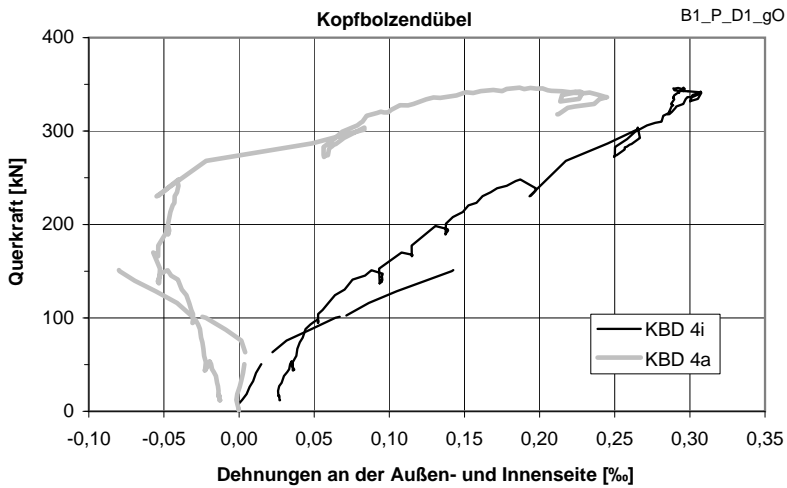
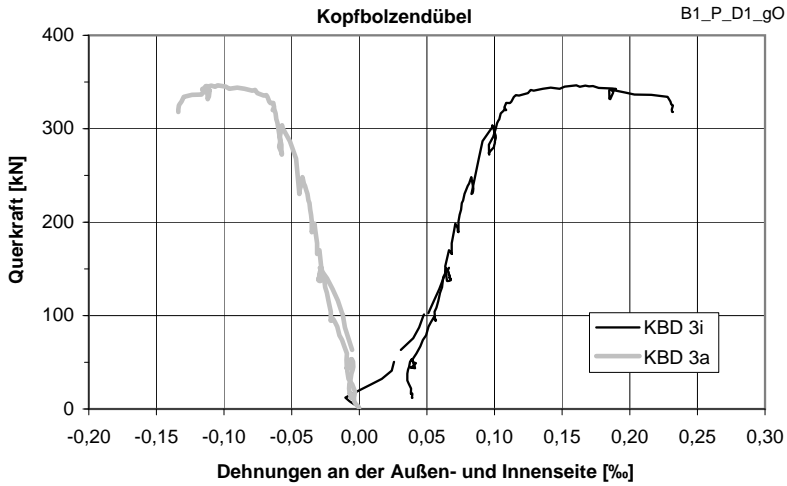
B.10.2. Verformungen

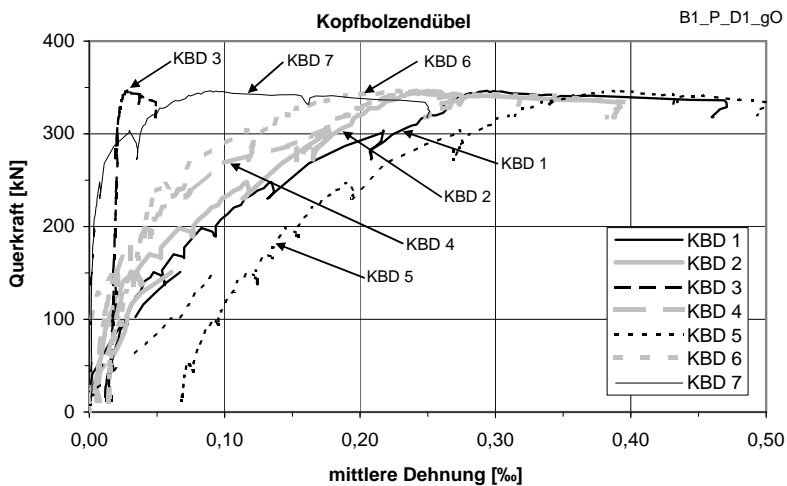
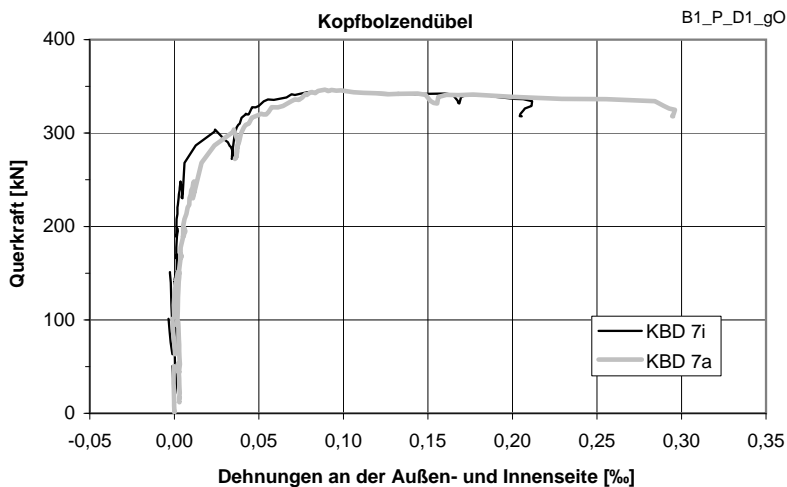
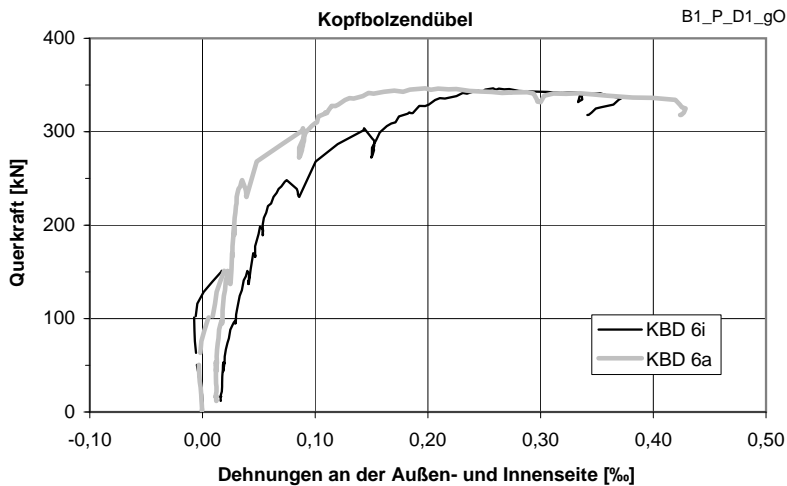


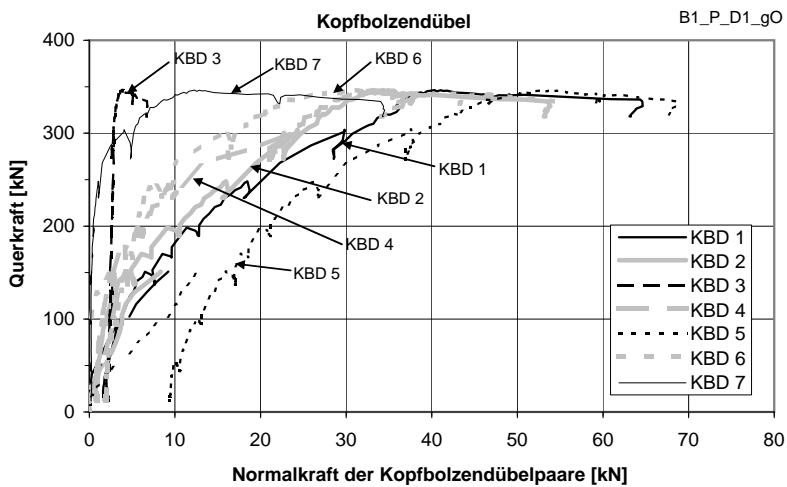
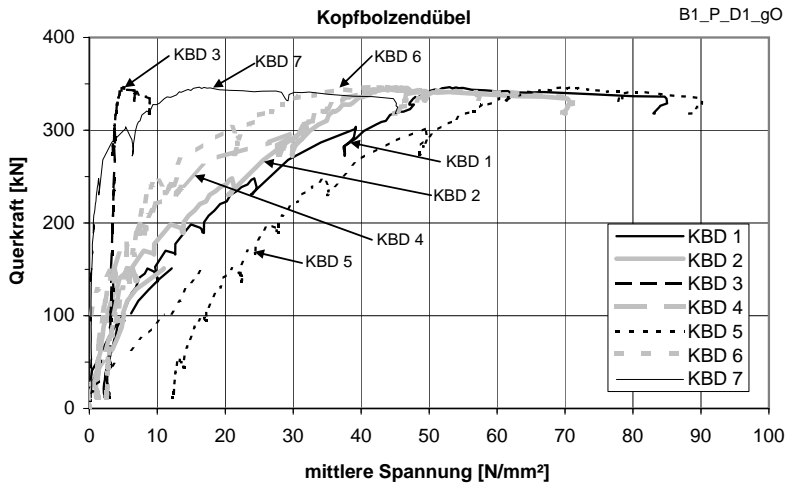


B.10.3. Kopfbolzendübel

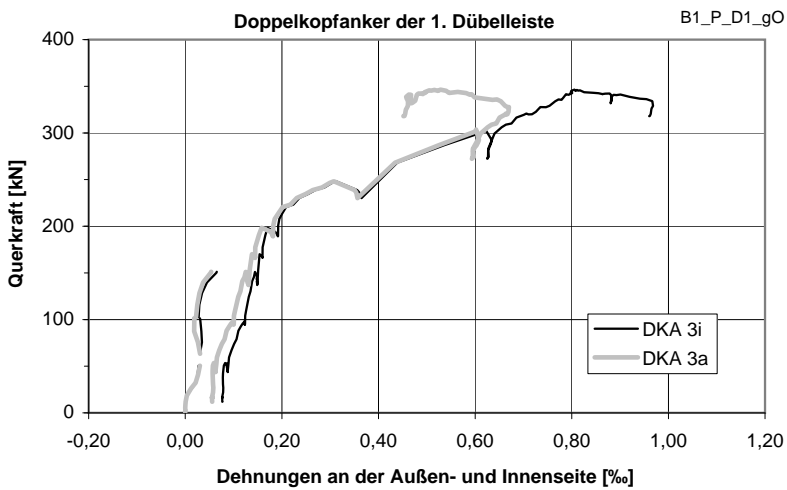
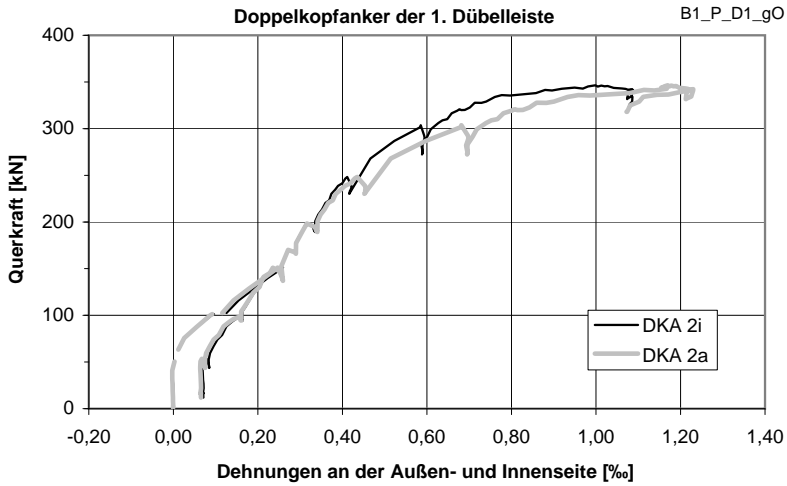


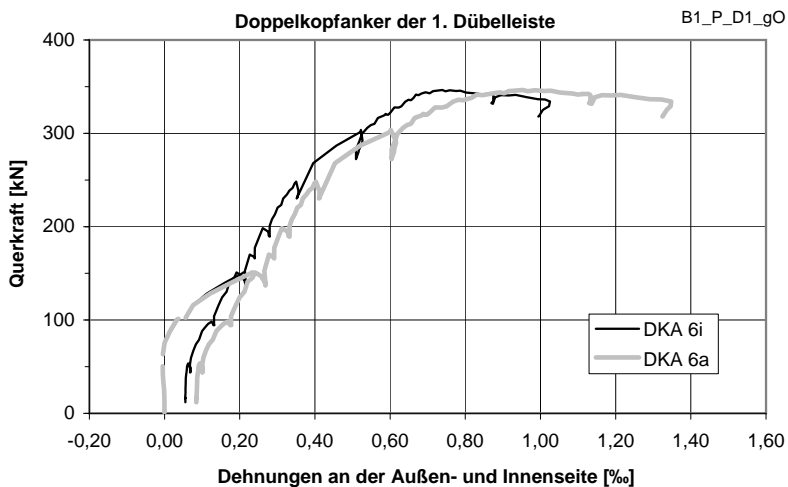
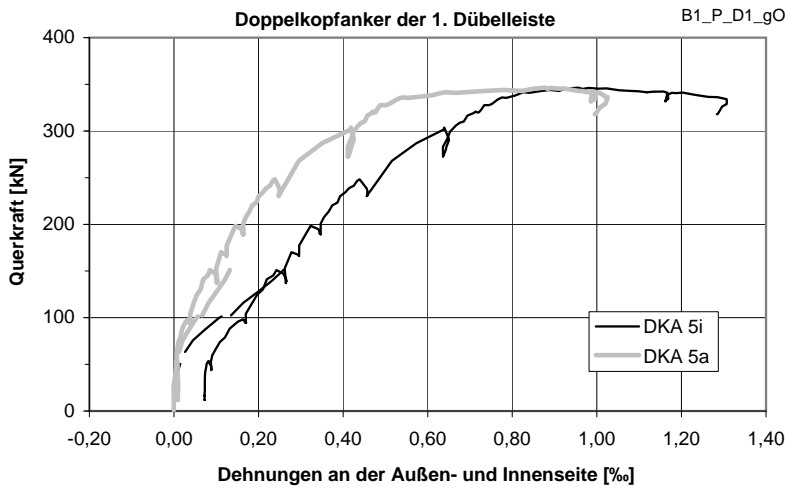
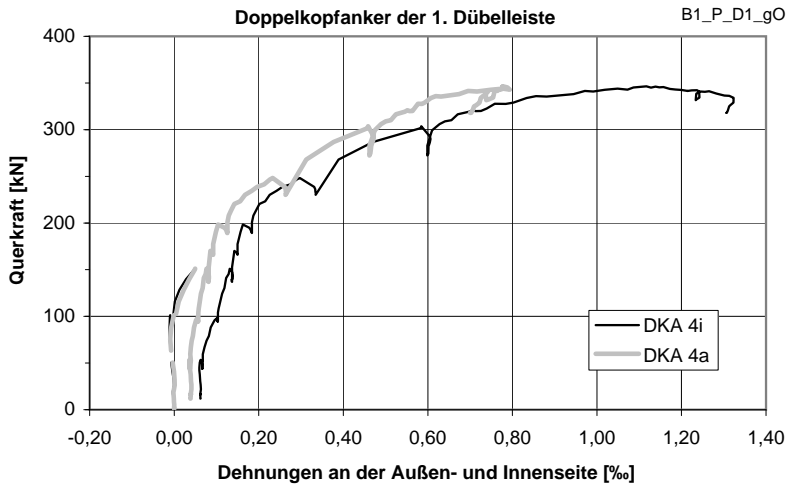


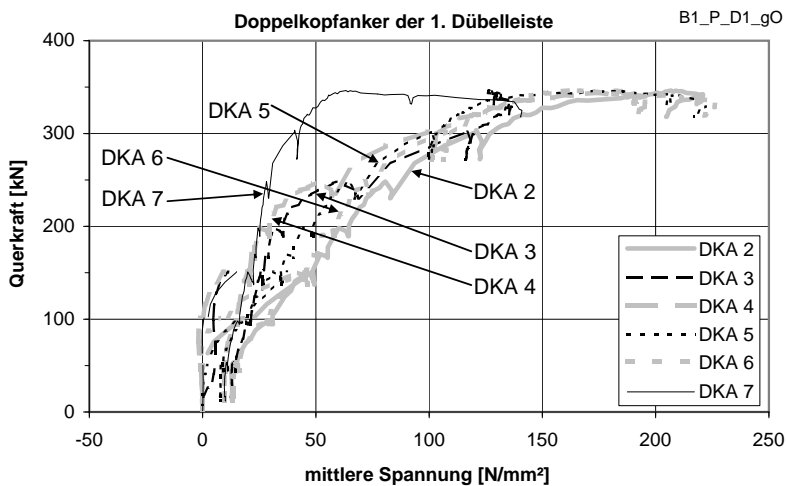
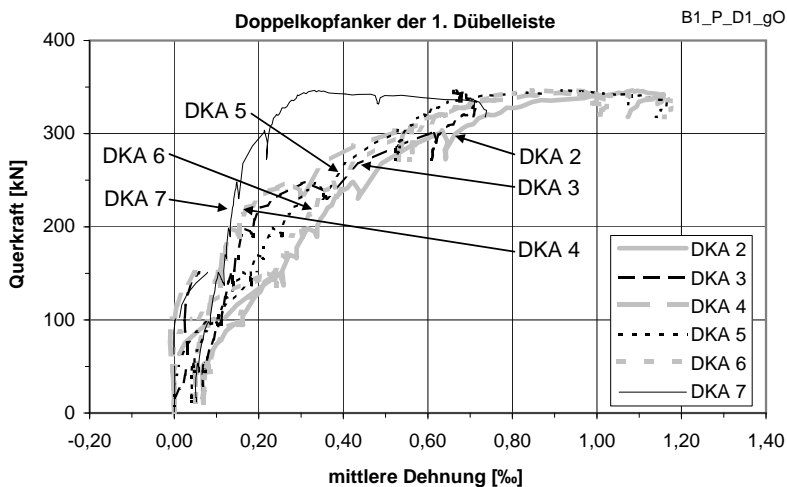
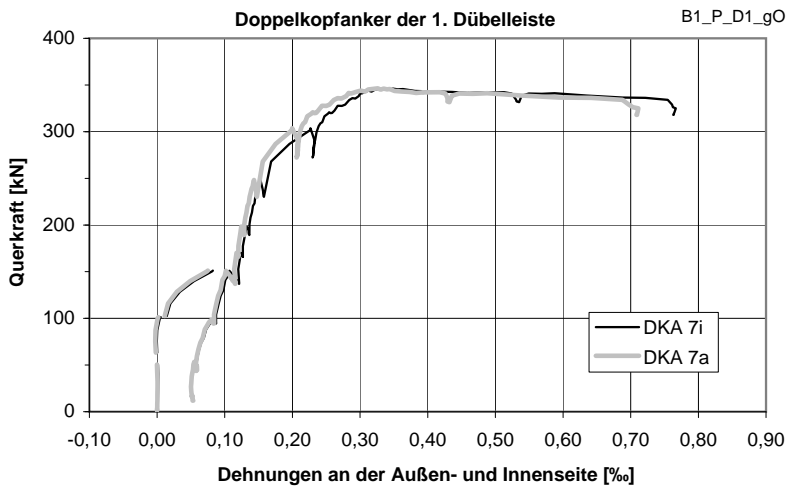


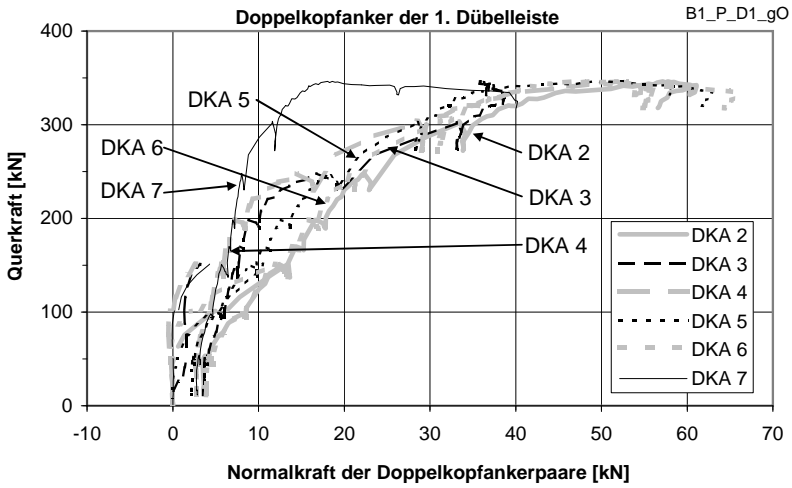


B.10.4. Doppelkopfanker

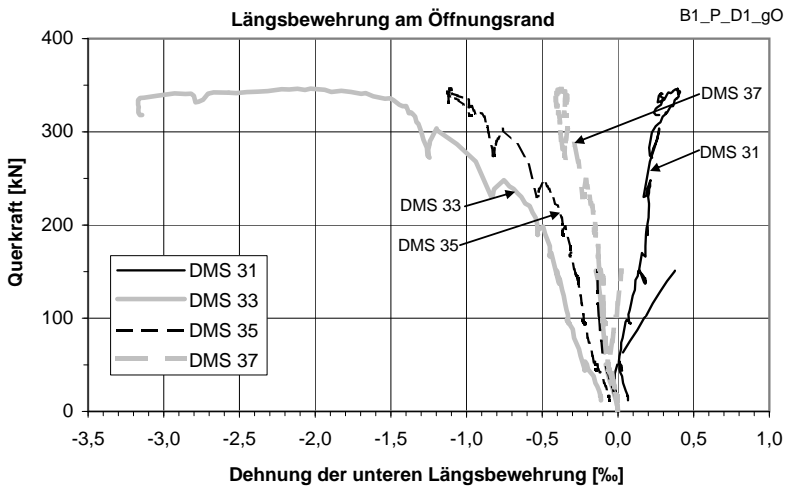


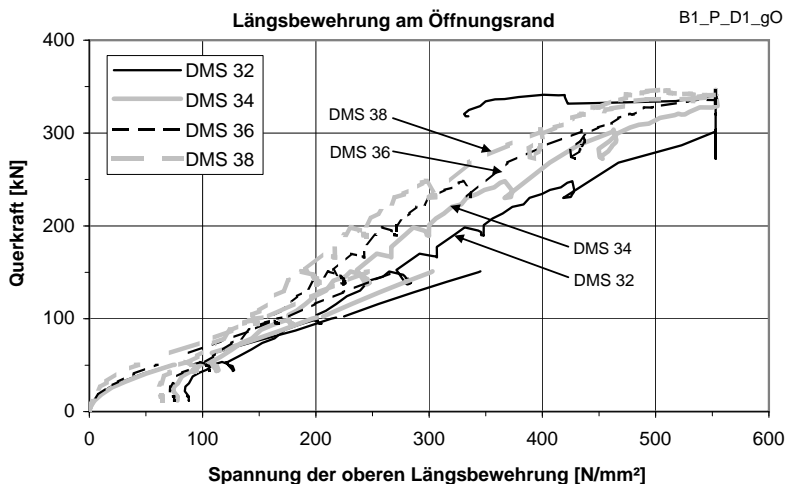
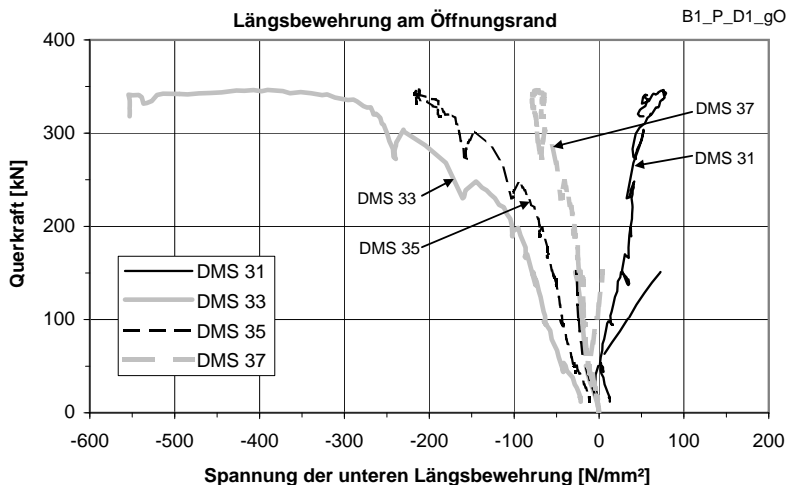
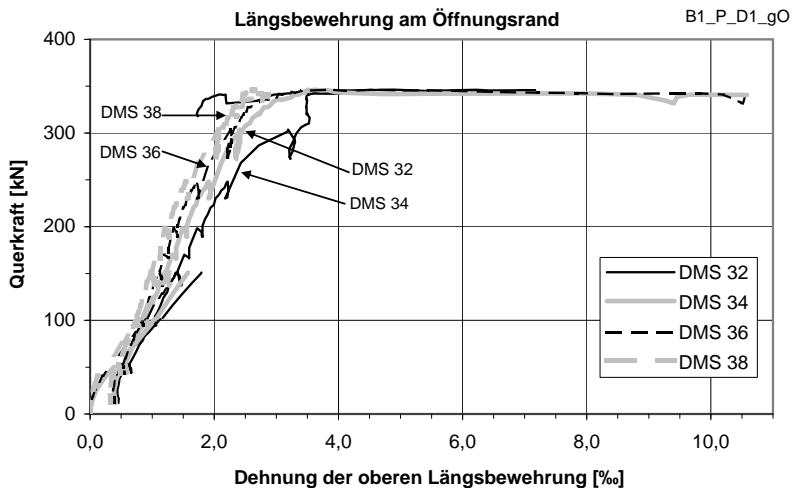


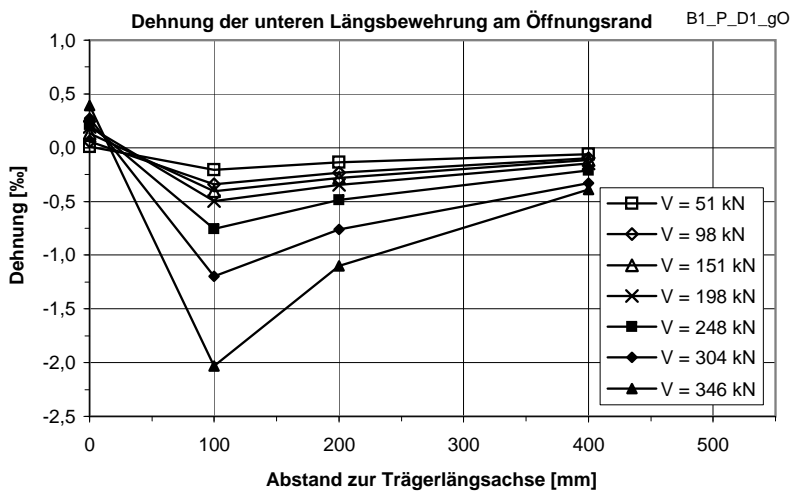
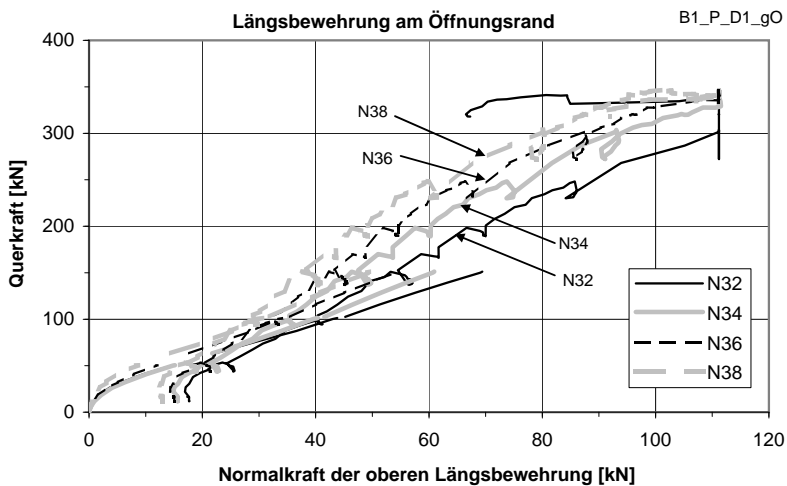
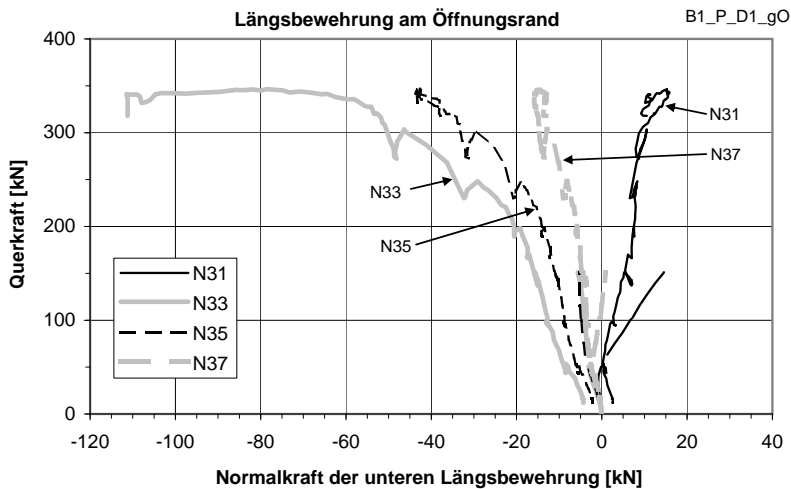


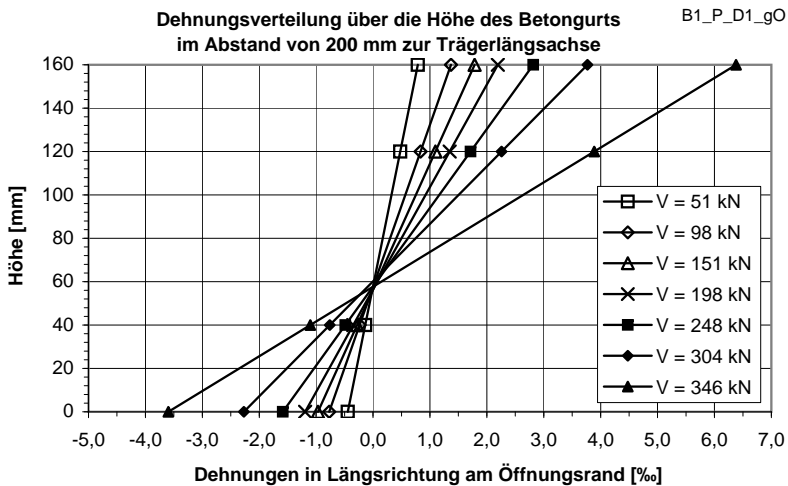
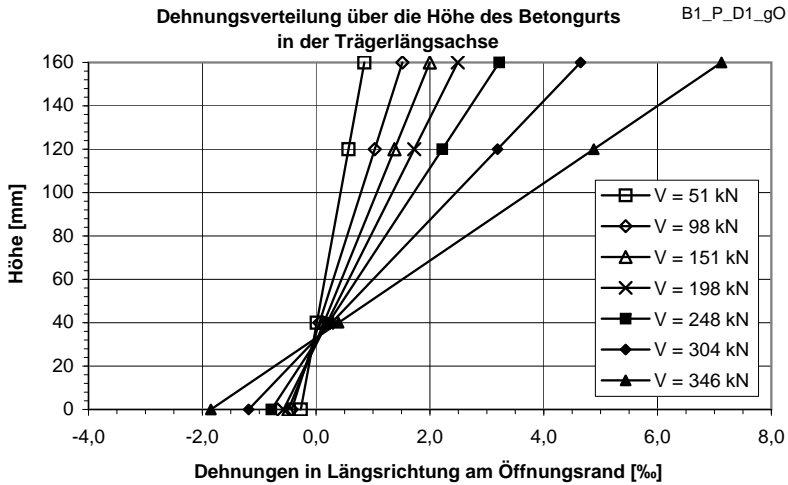
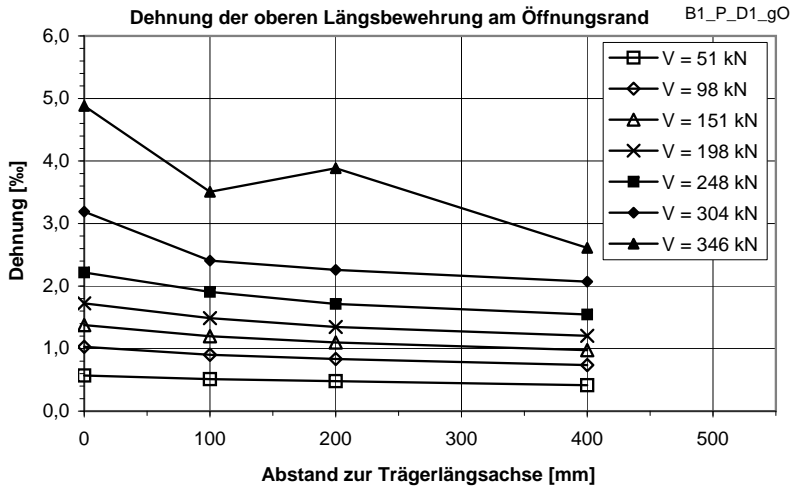


B.10.5. Längsbewehrung

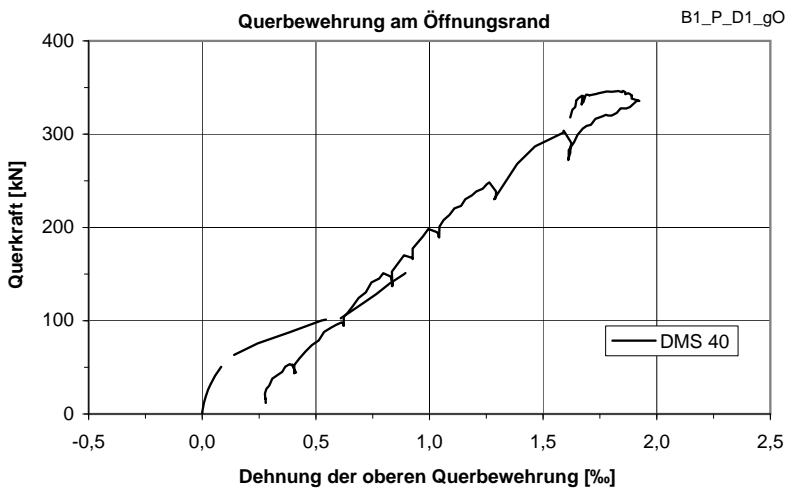
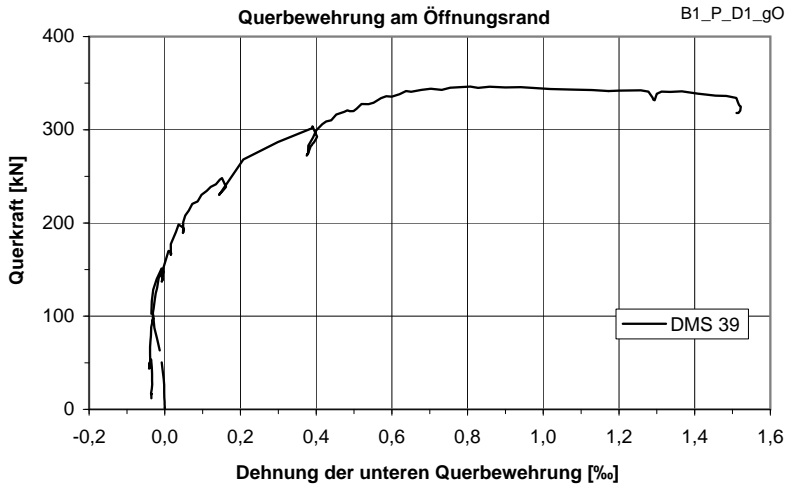


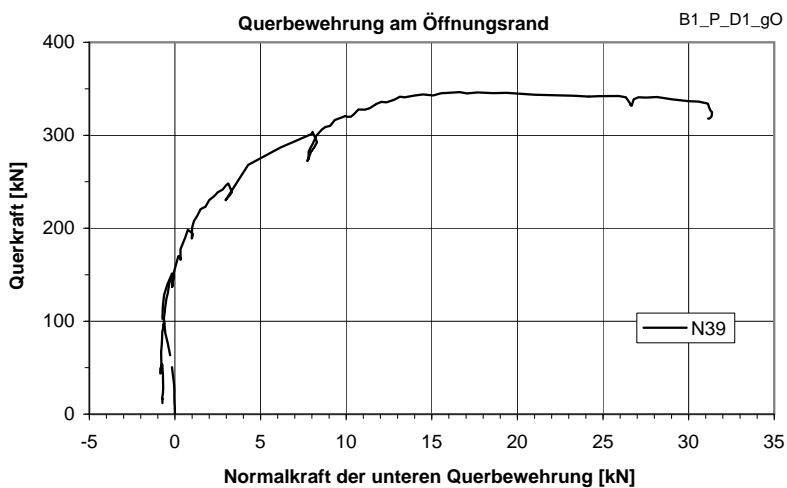
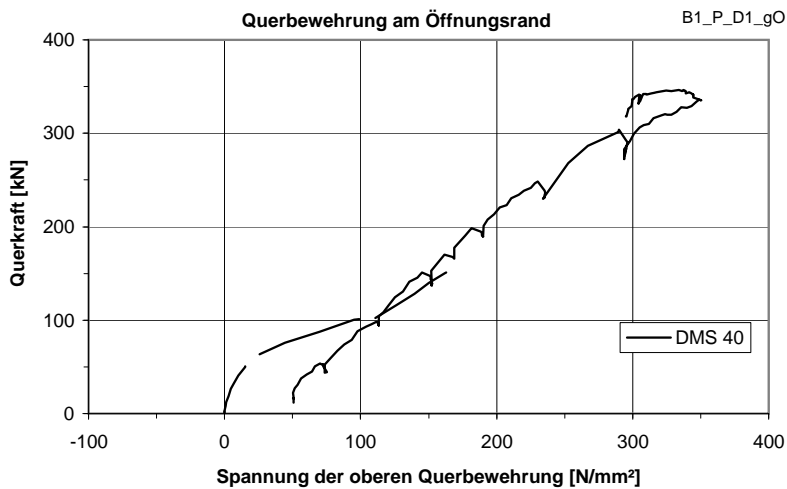
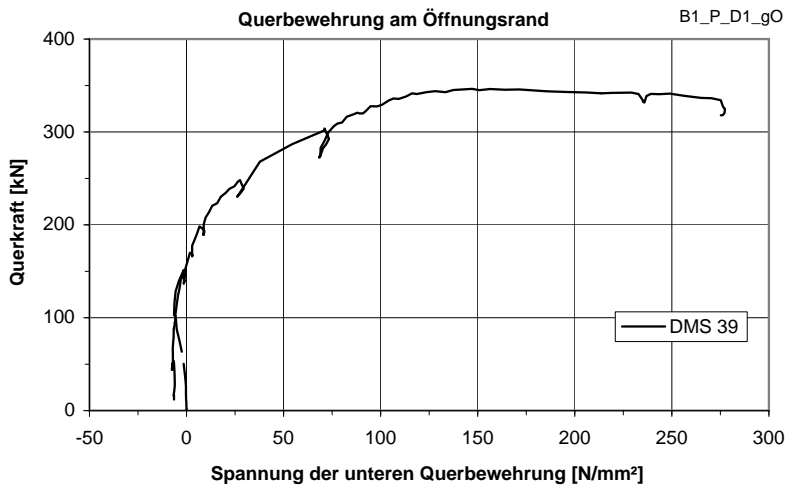


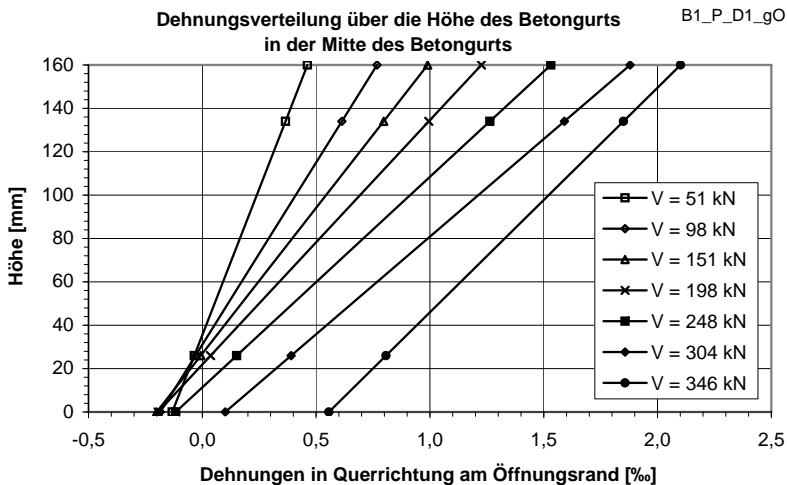
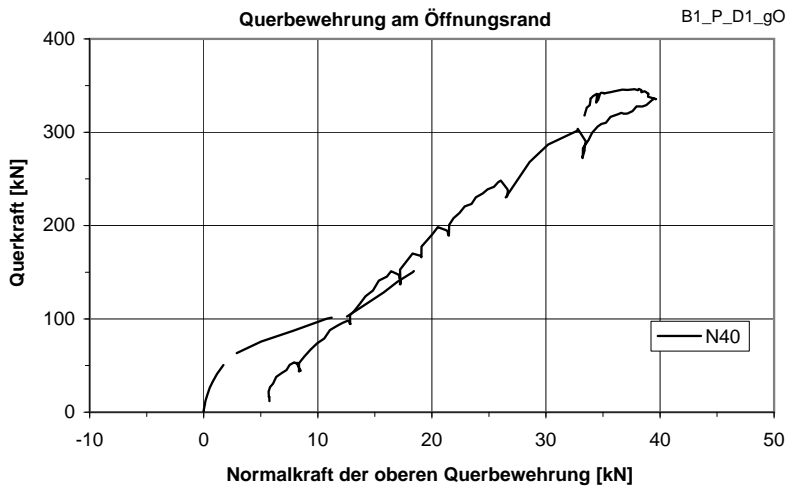




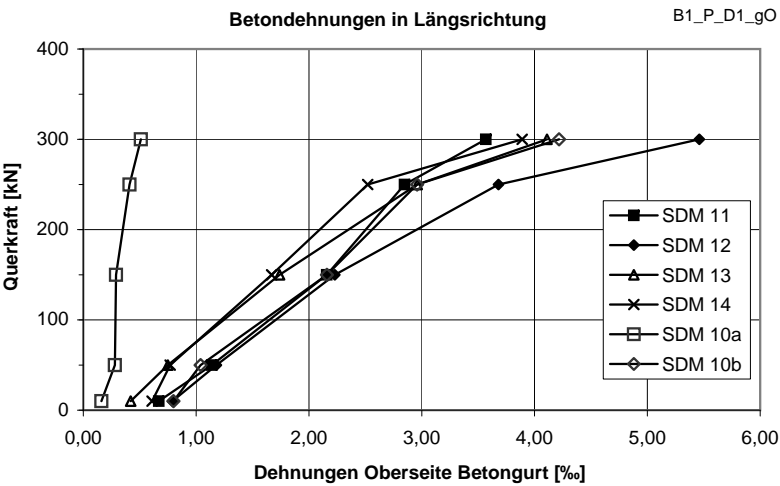
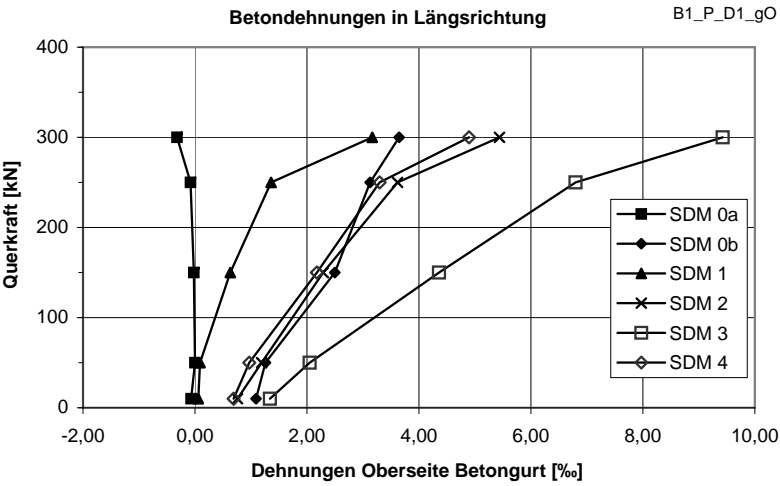
B.10.6. Querbewehrung

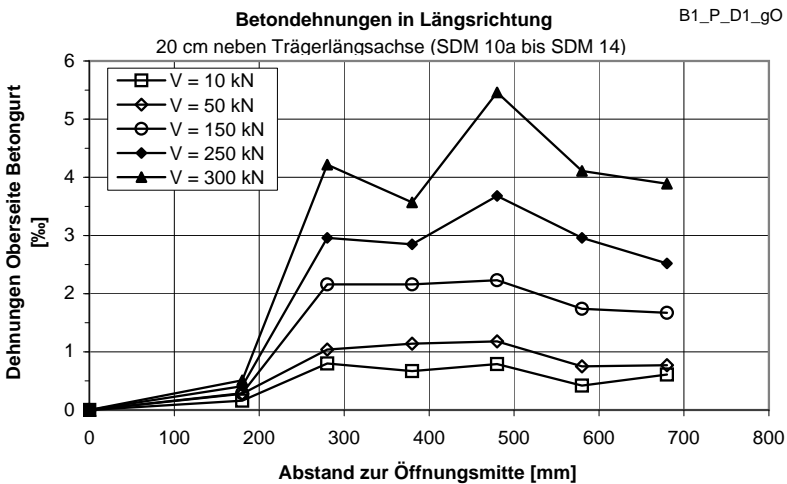
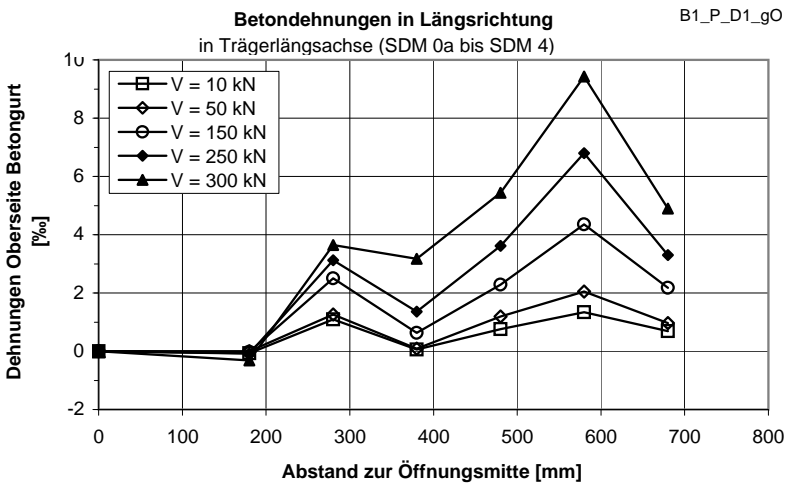
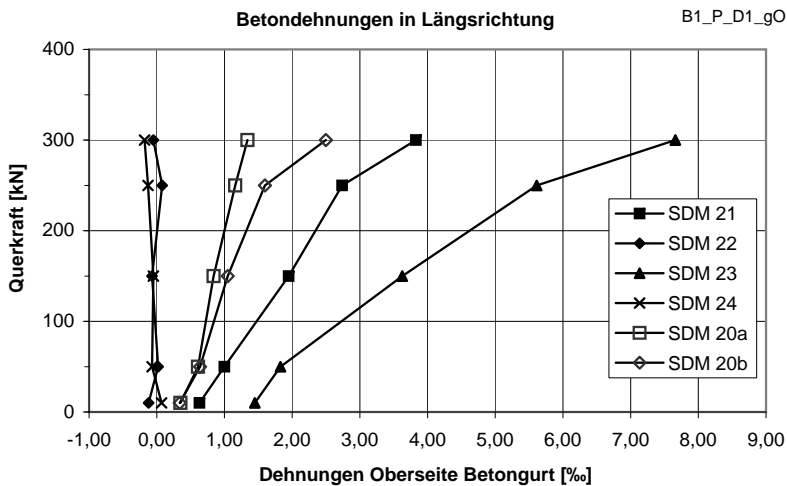


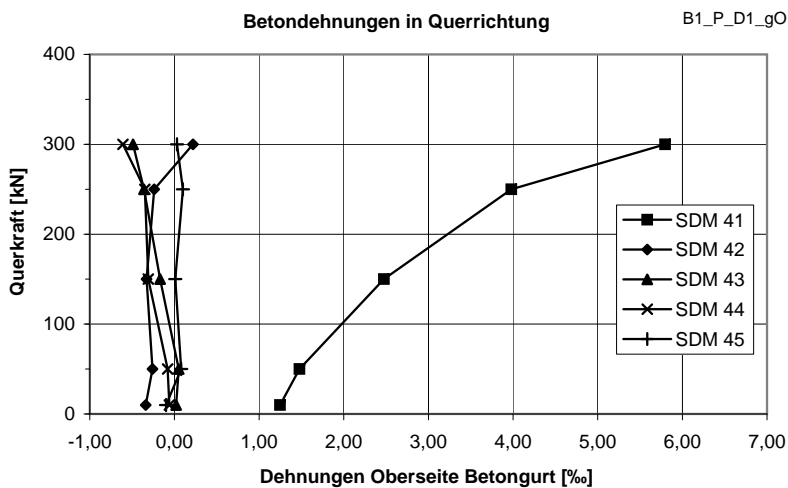
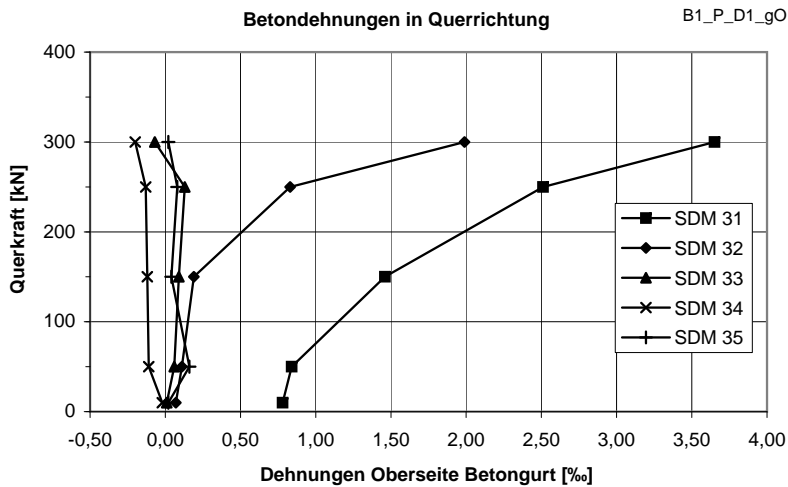
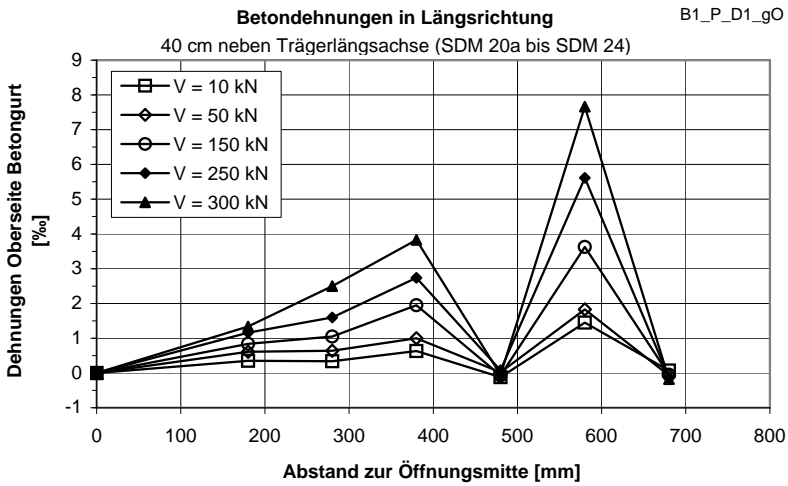


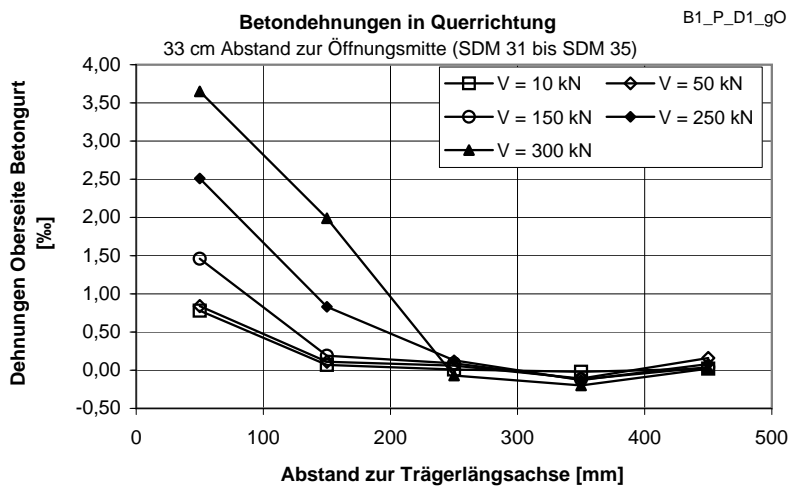
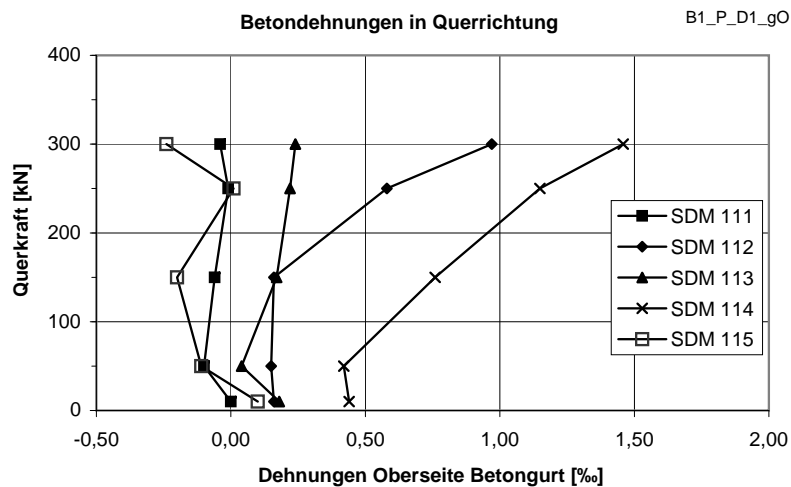
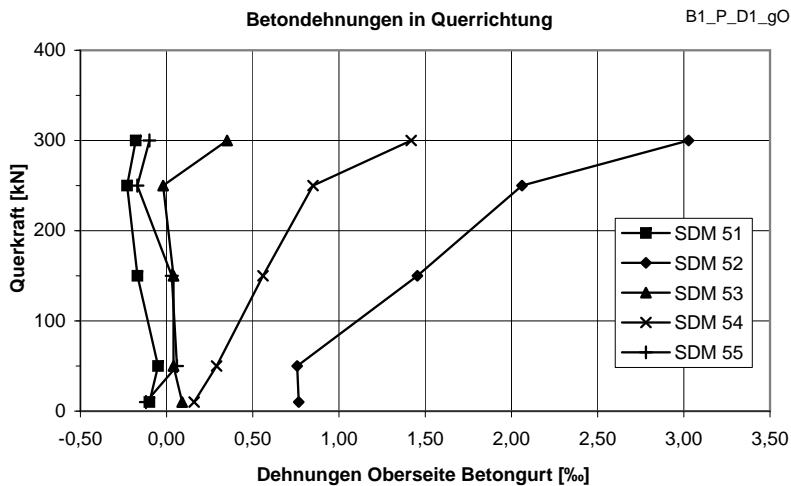


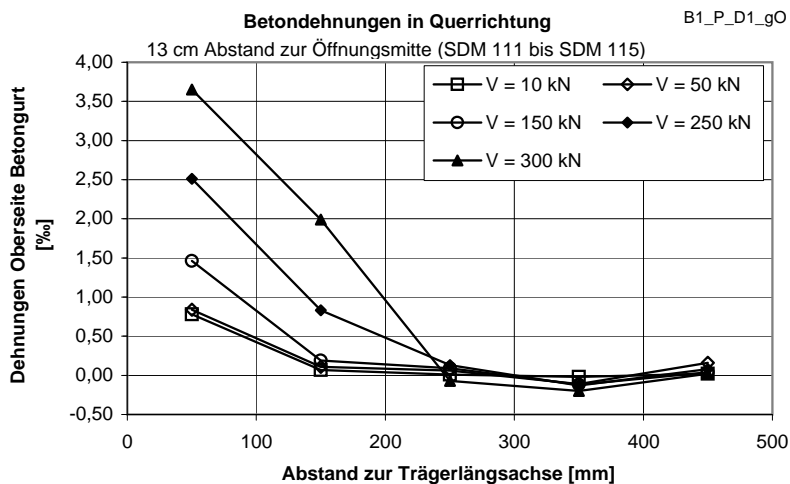
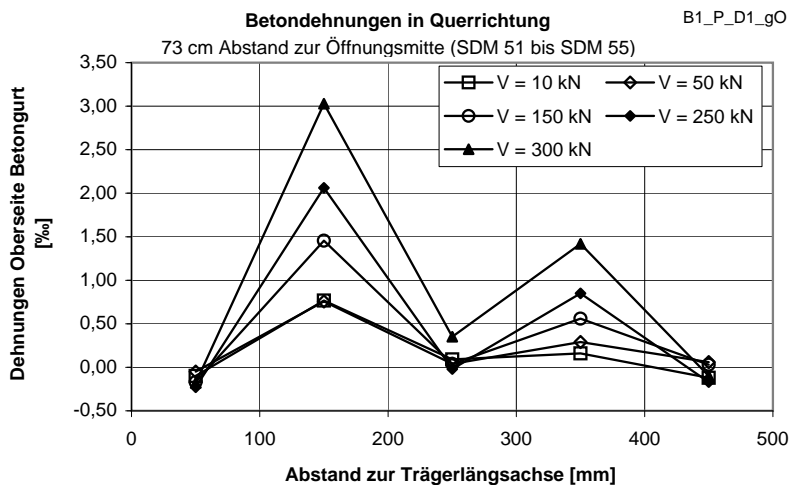
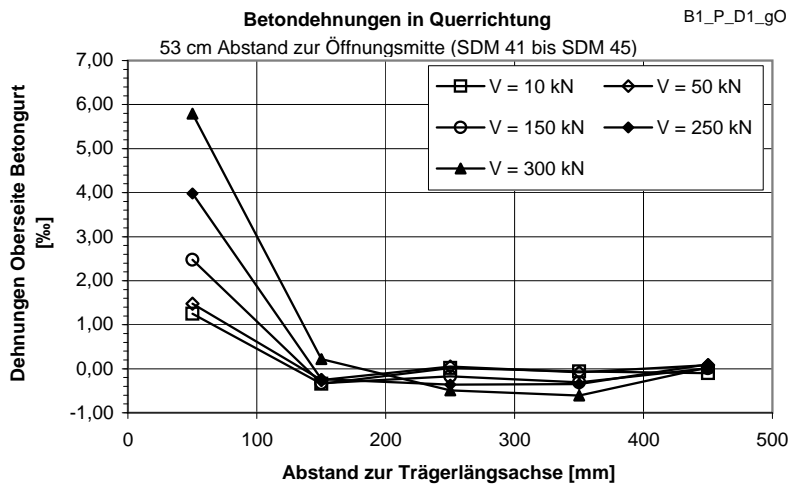
B.10.7. Betondehnungen

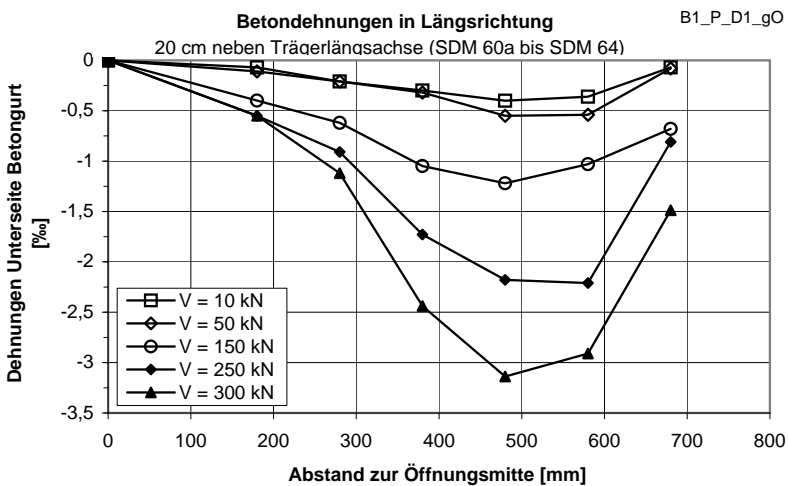
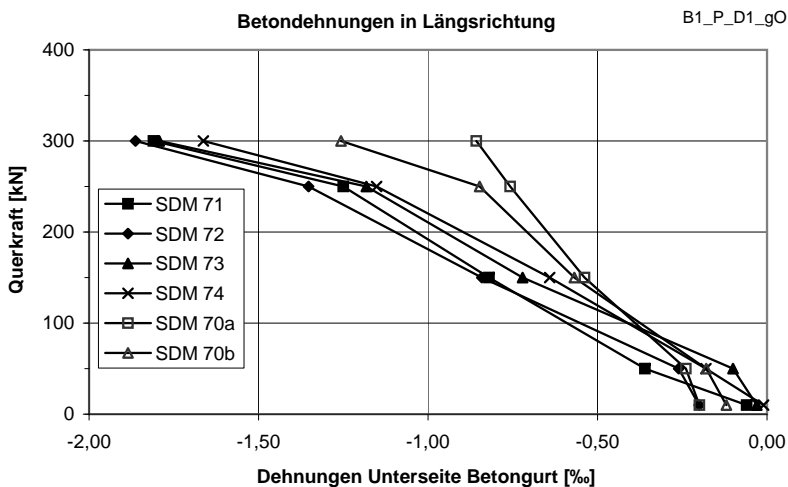
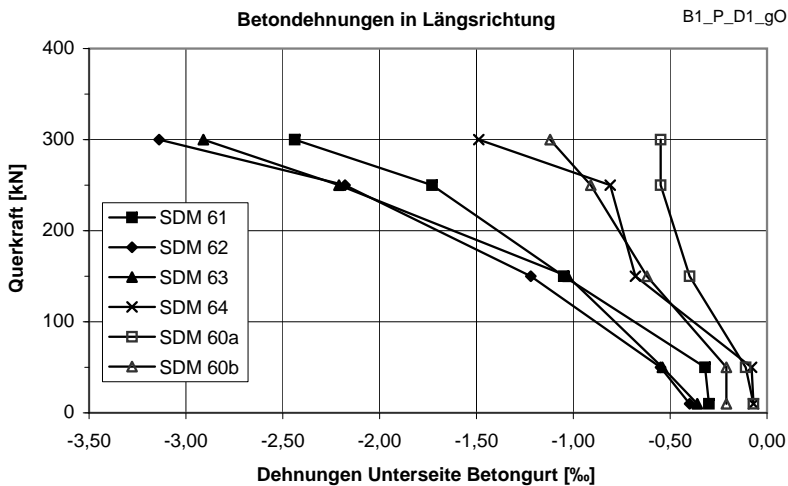


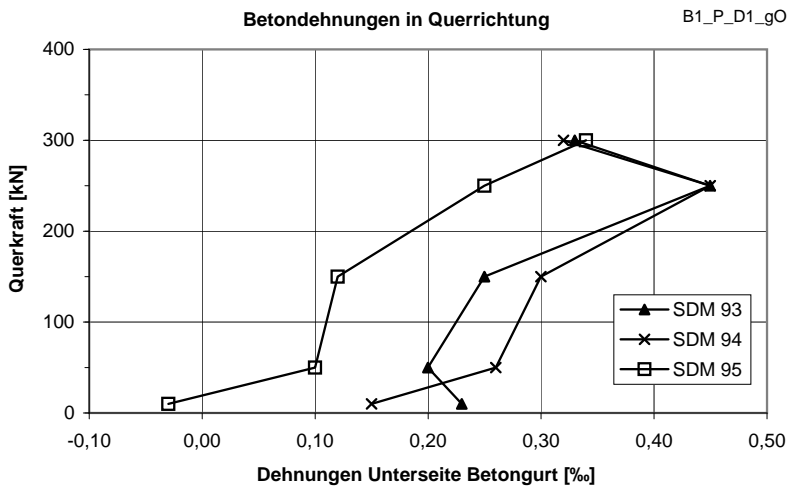
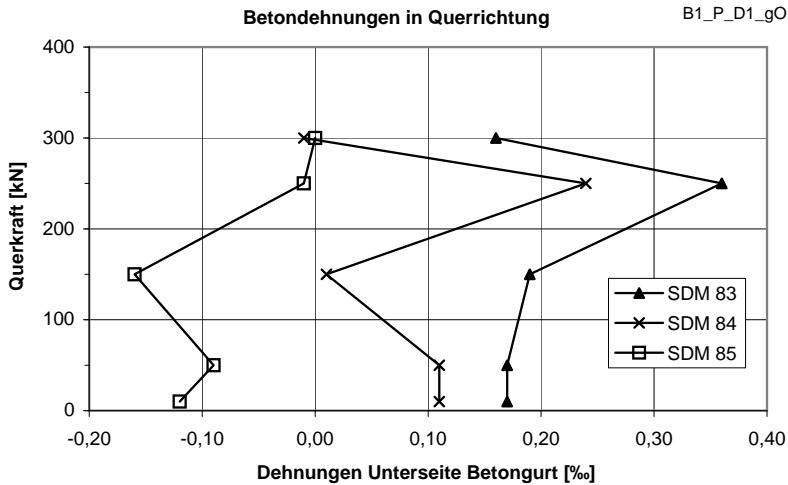
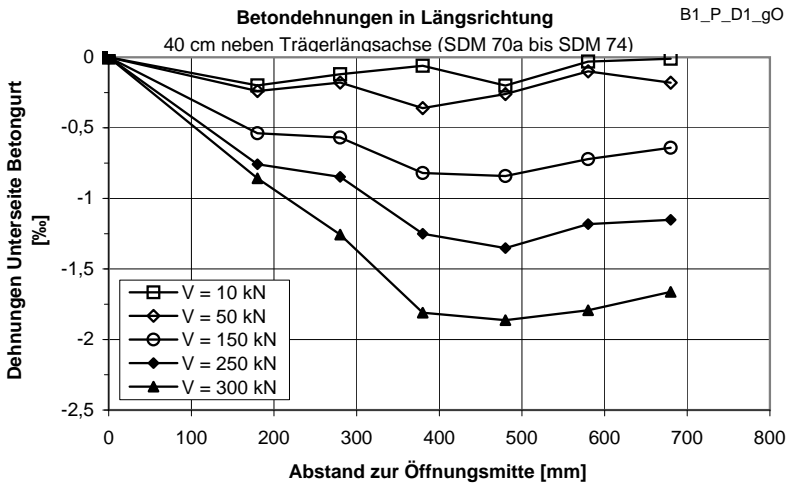


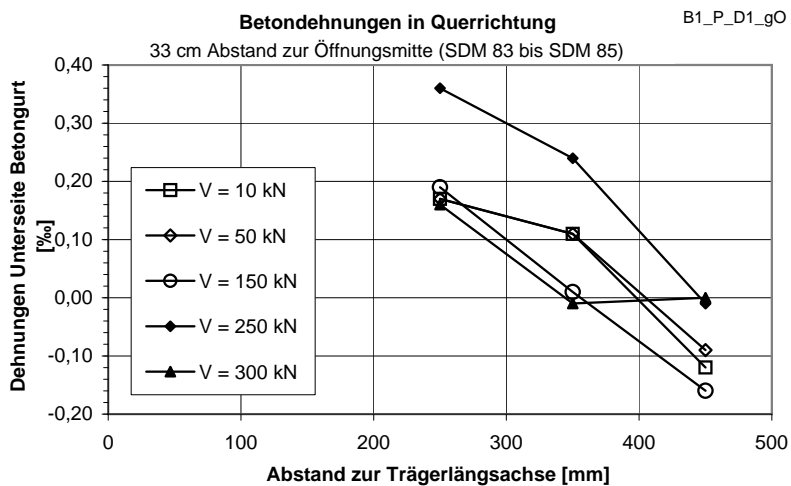
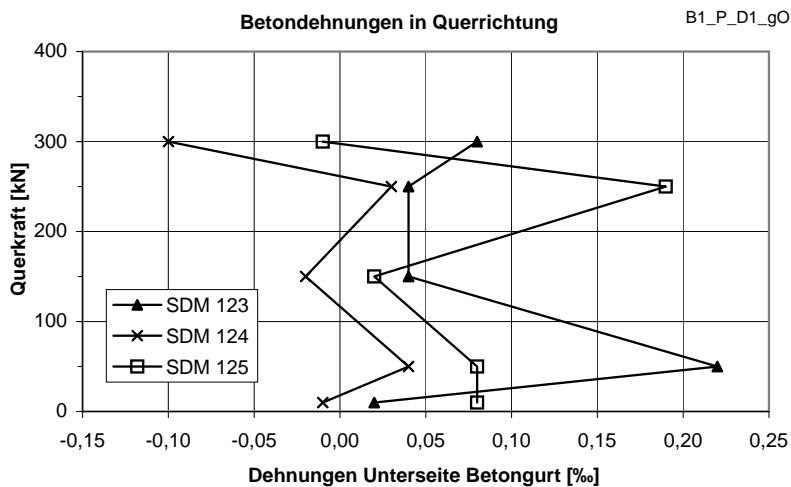
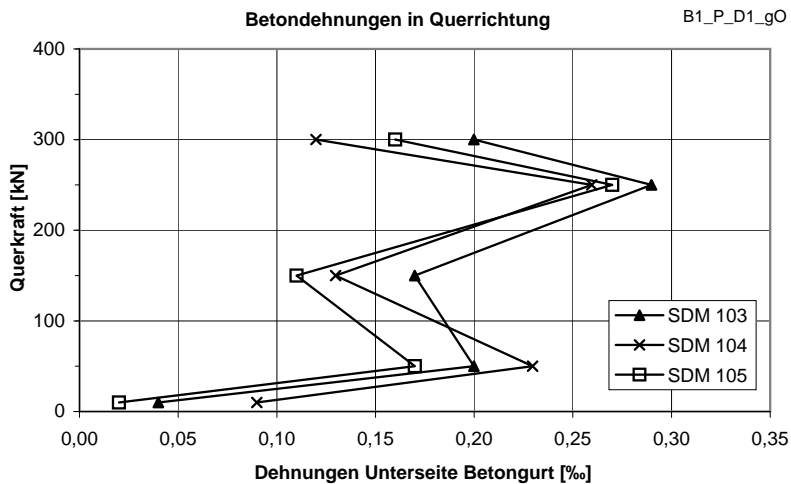


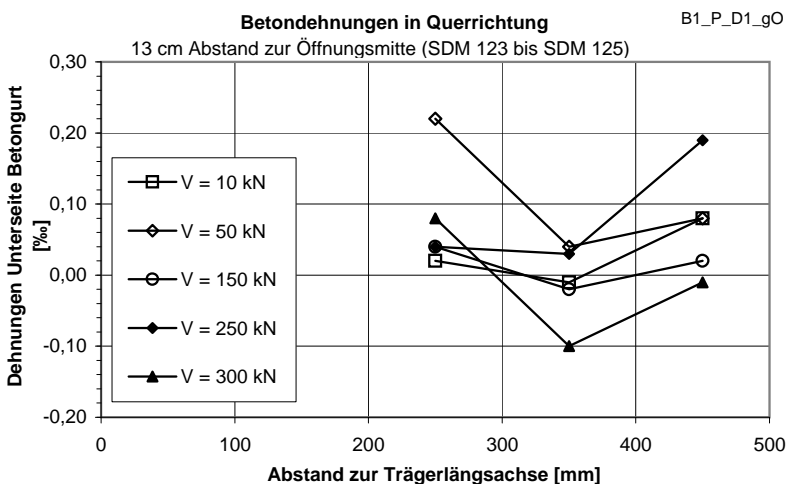
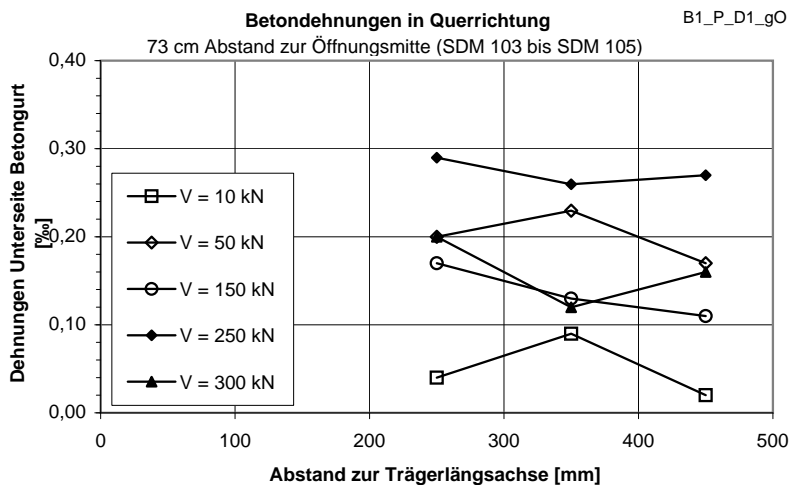
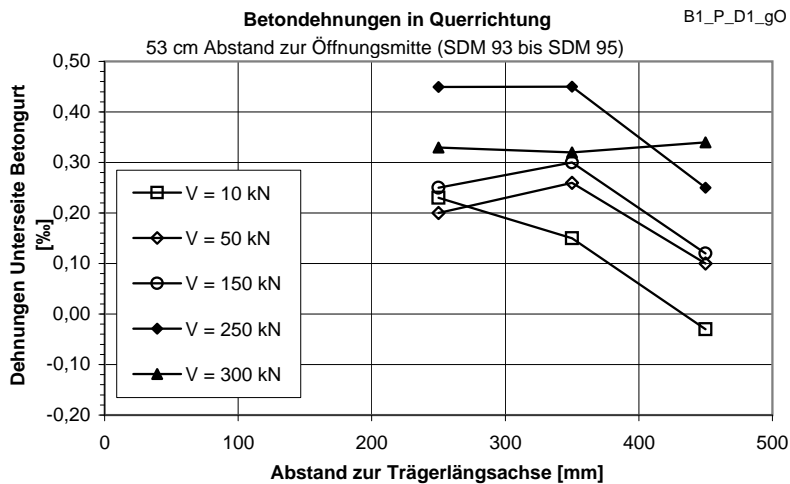






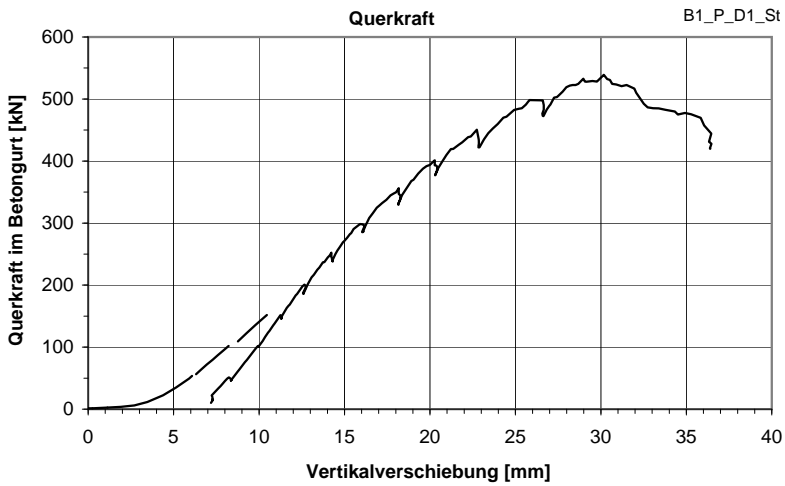
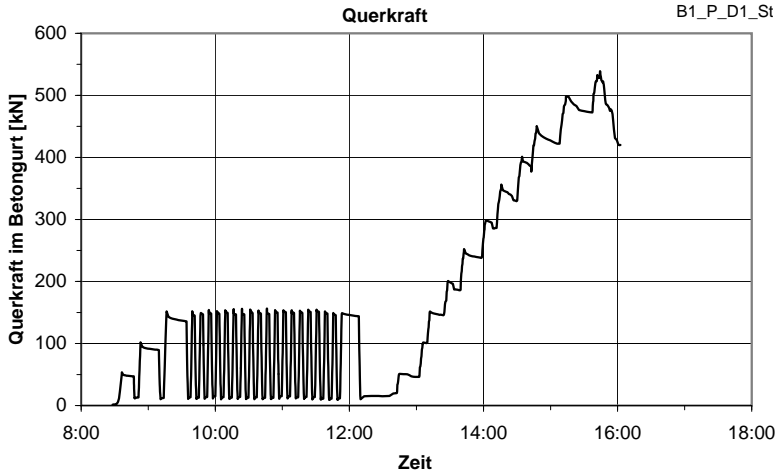


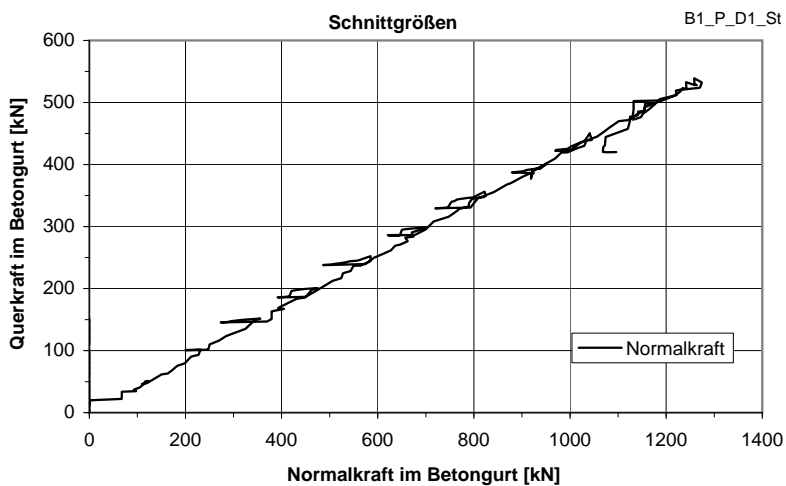
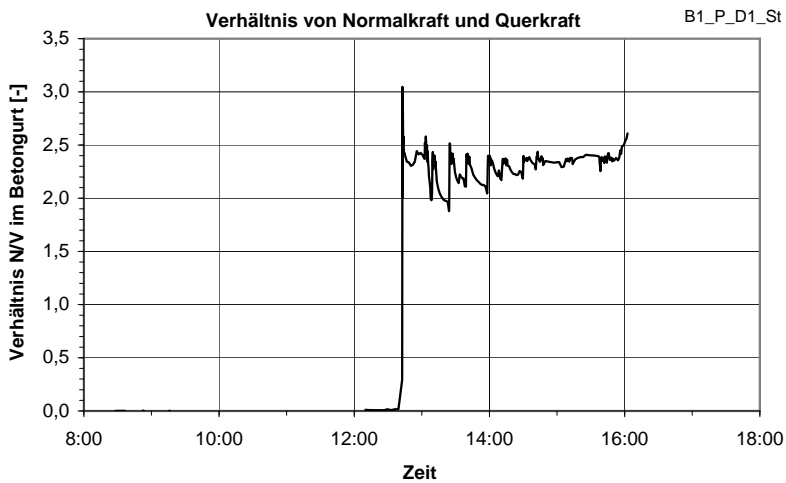
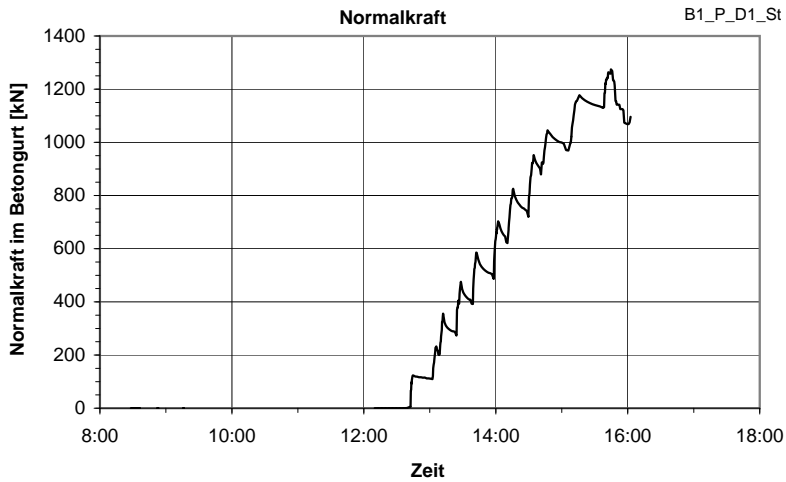


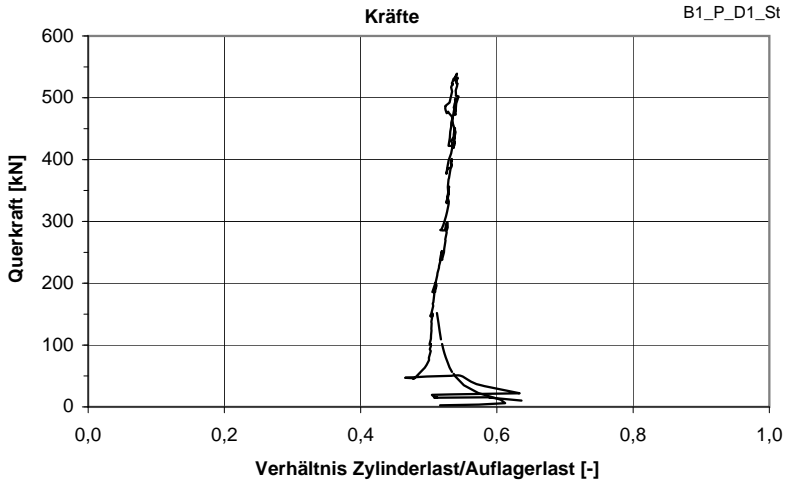
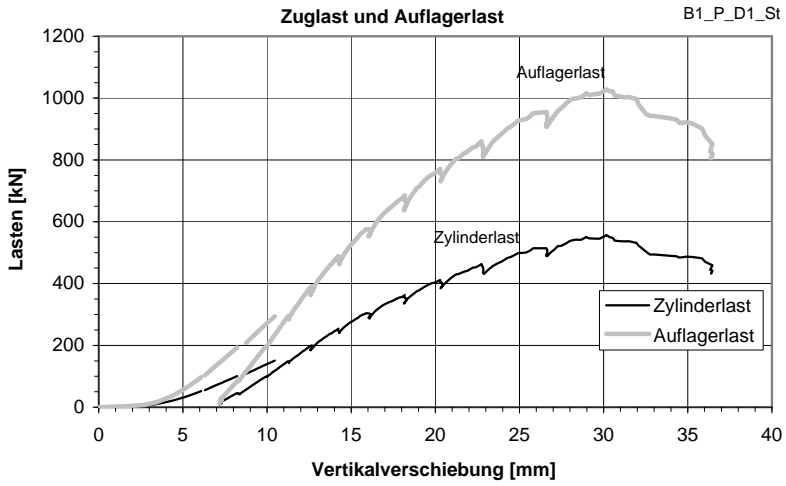


B.11. Versuch B1_P_D1_St

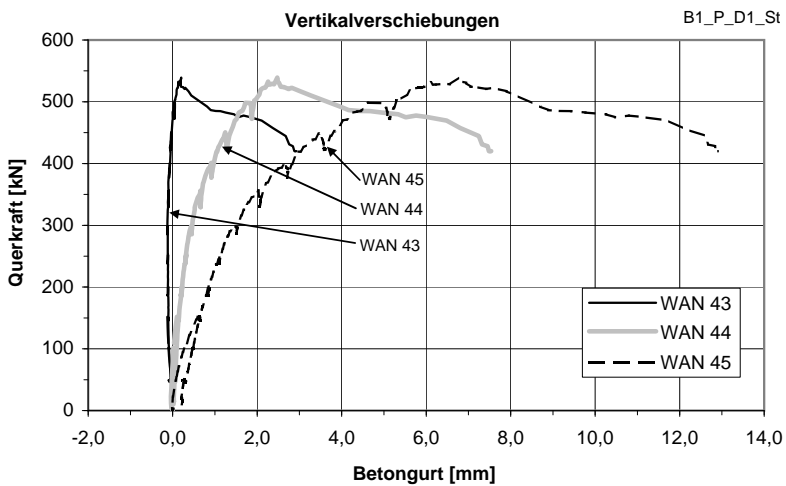
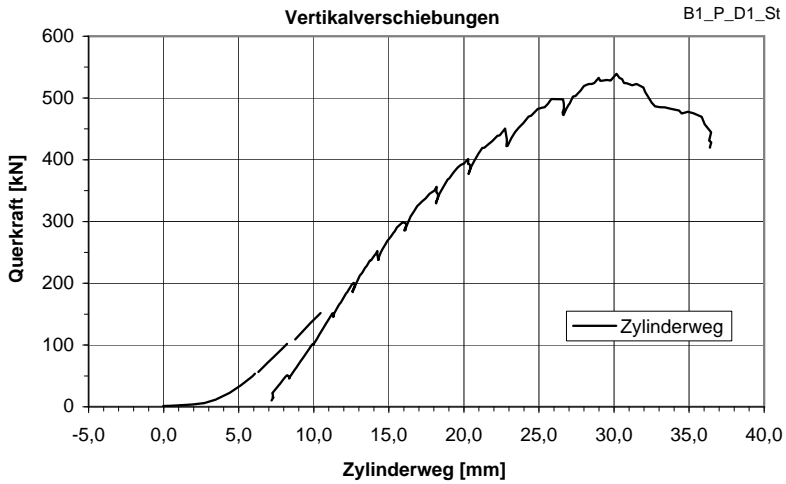
B.11.1. Kräfte

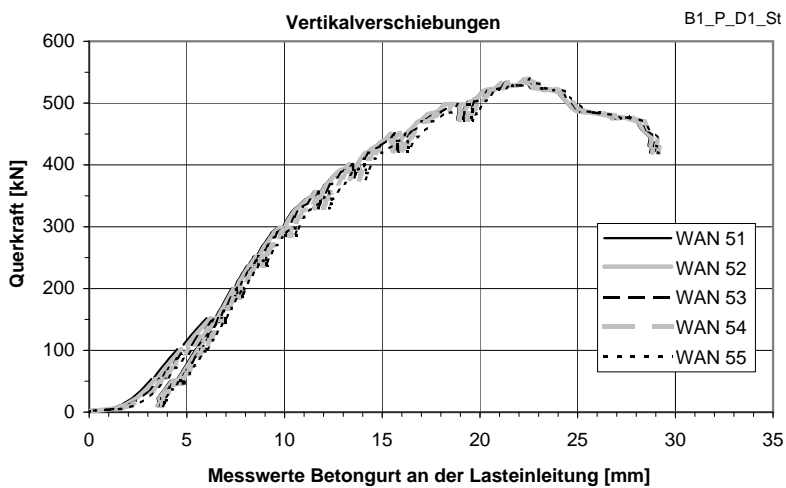
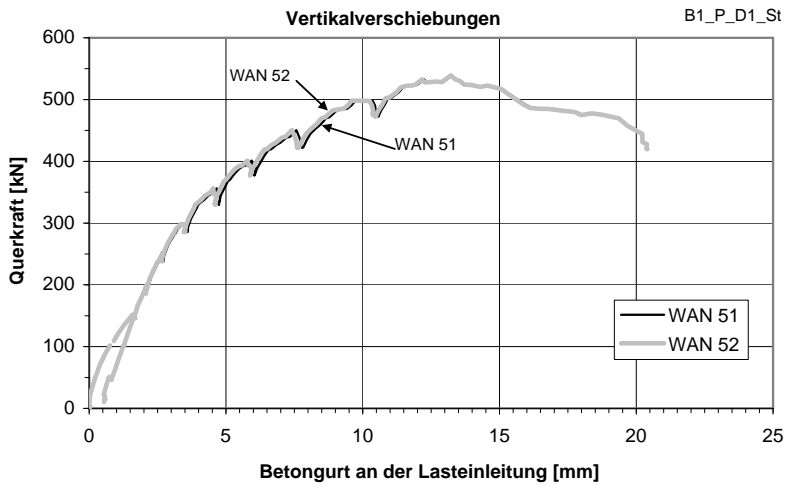
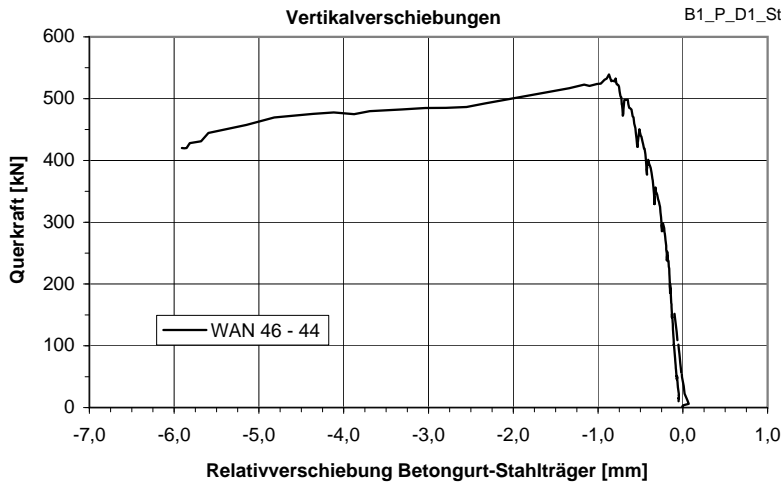




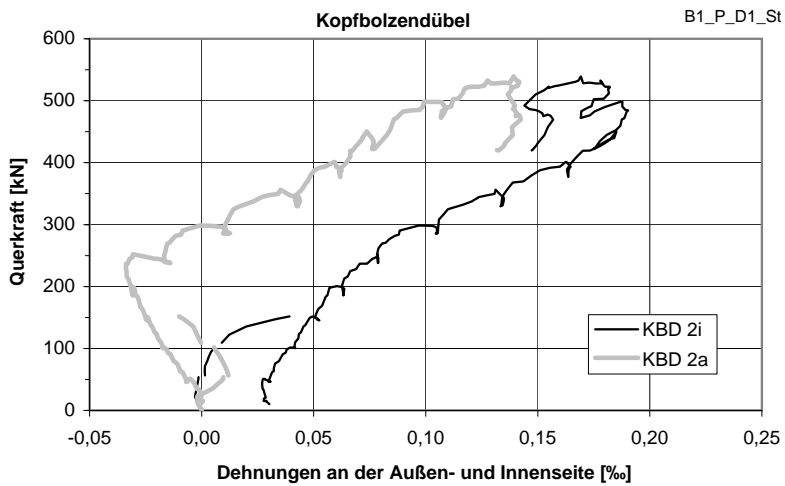
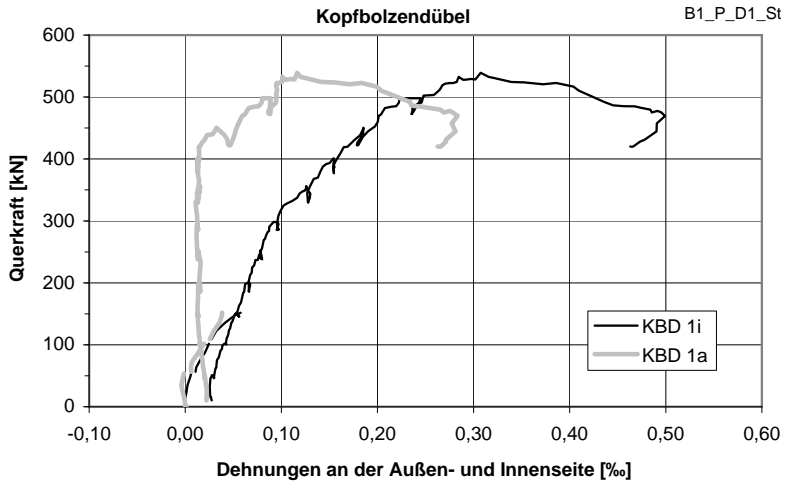


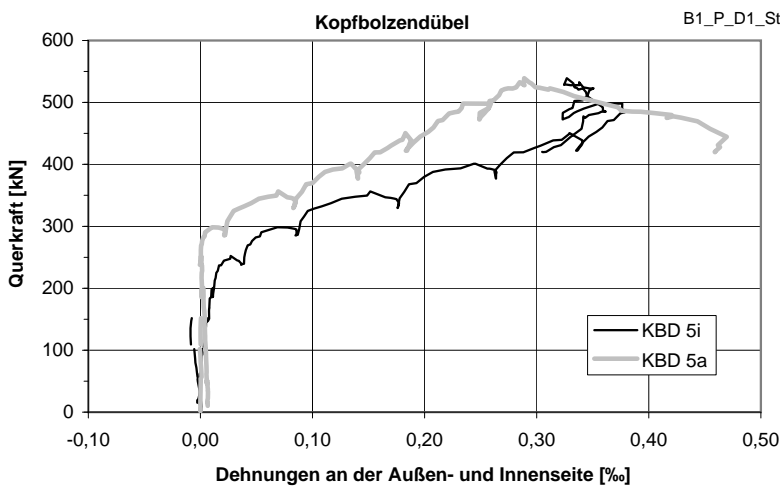
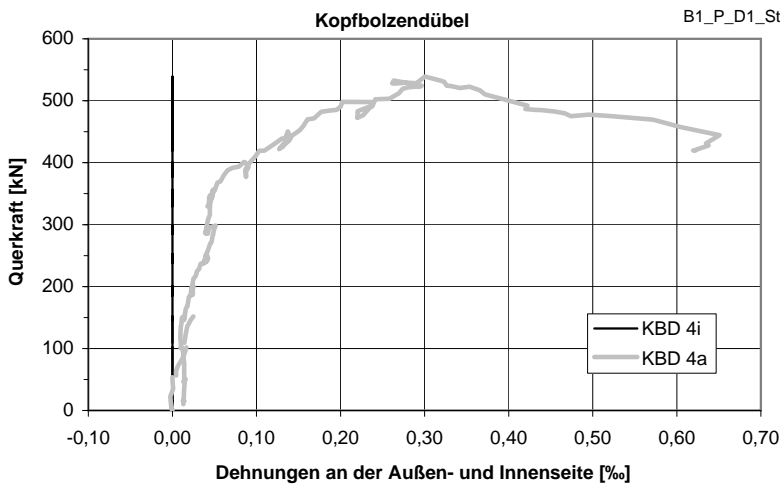
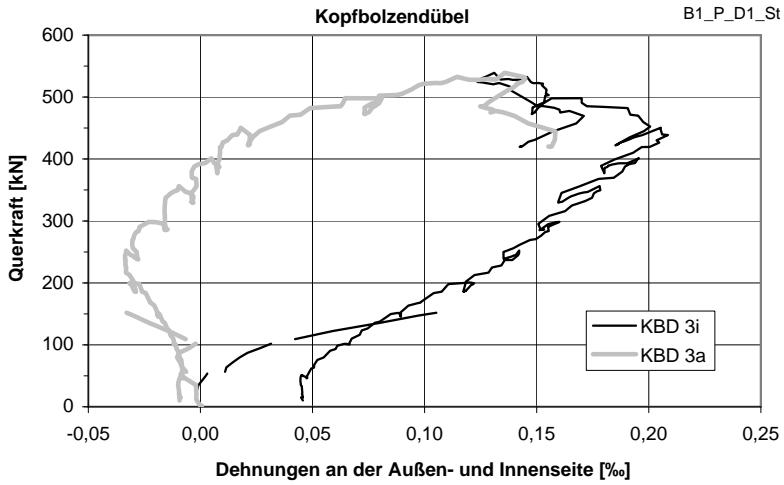
B.11.2. Verformungen

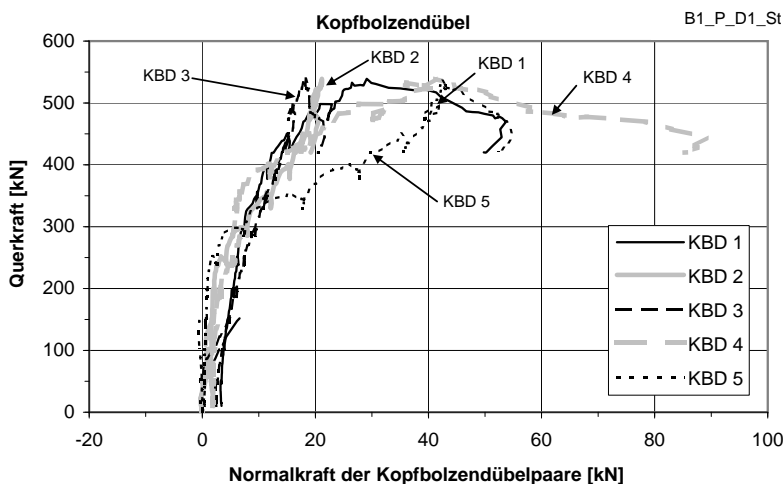
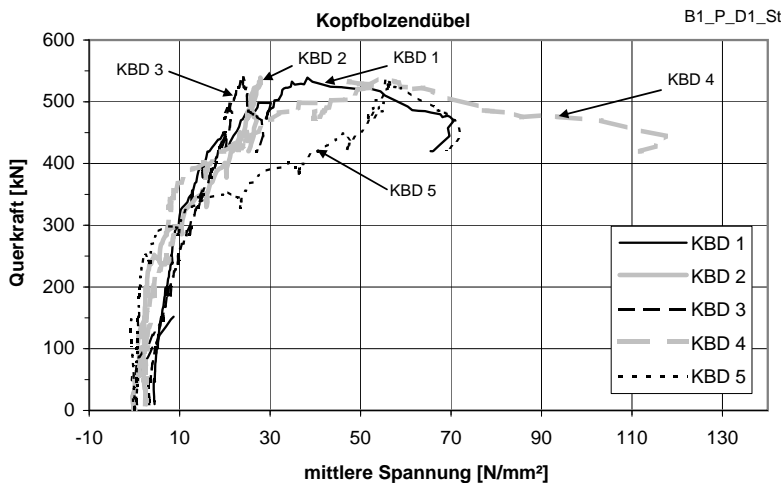
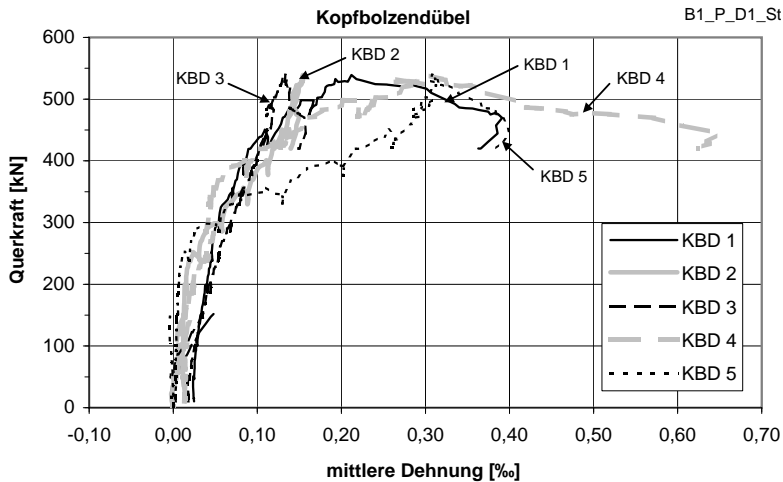




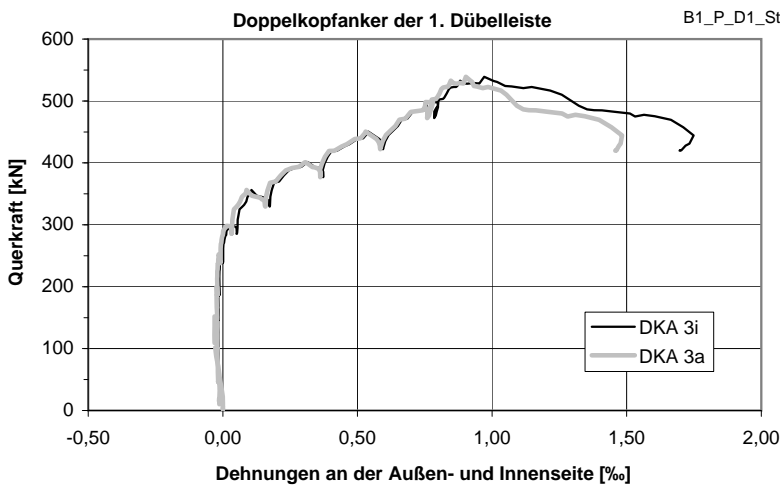
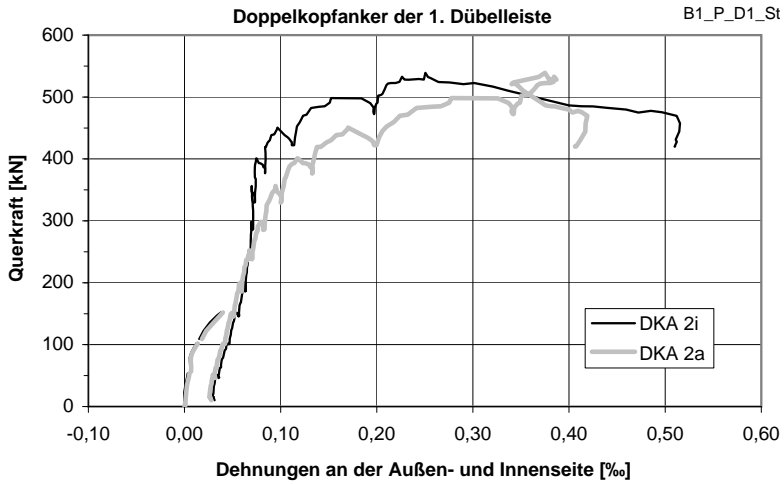
B.11.3. Kopfbolzendübel

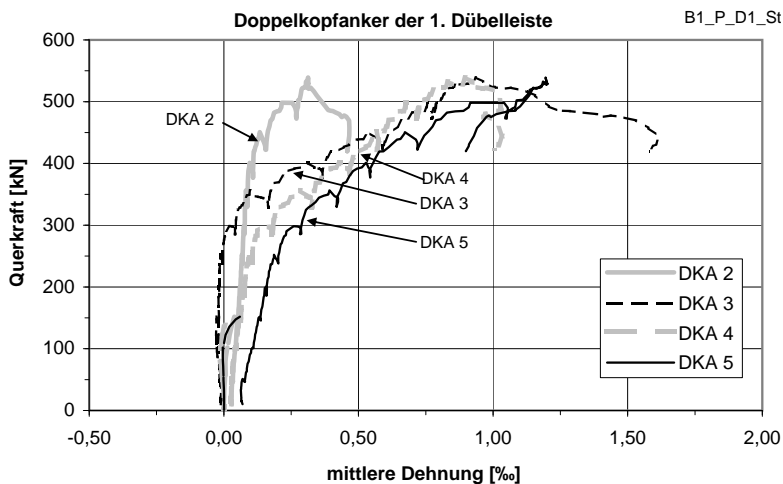
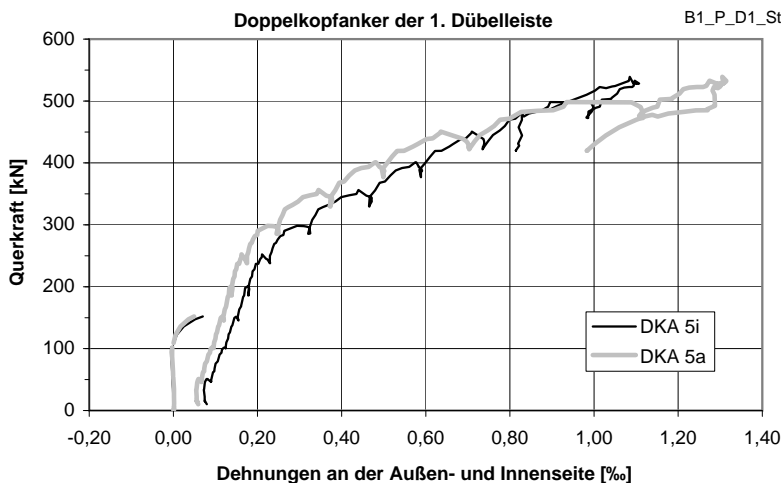
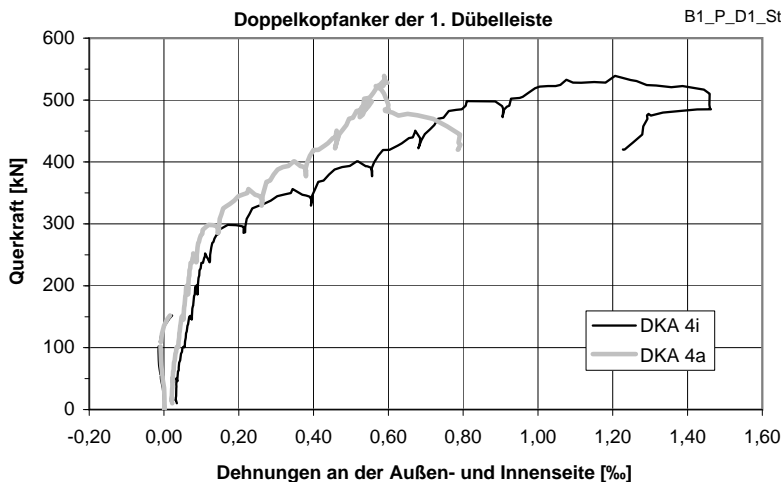


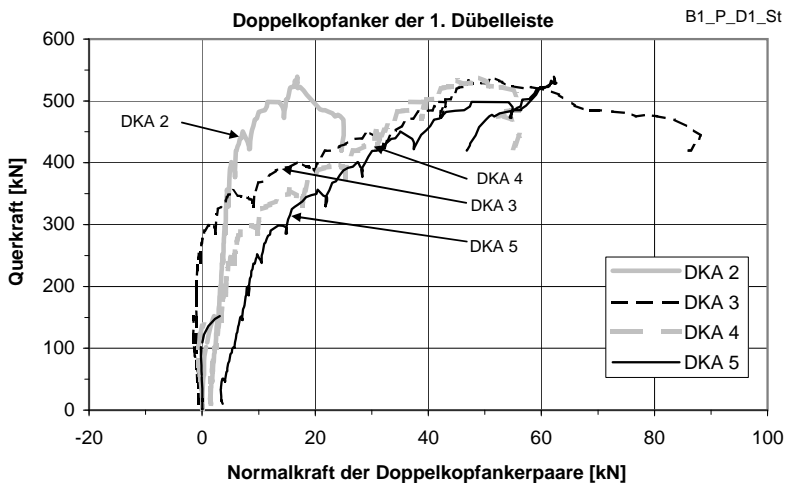
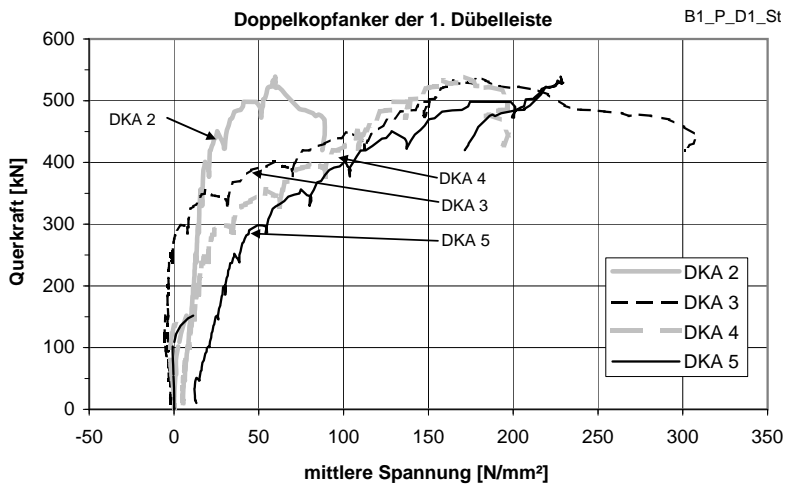




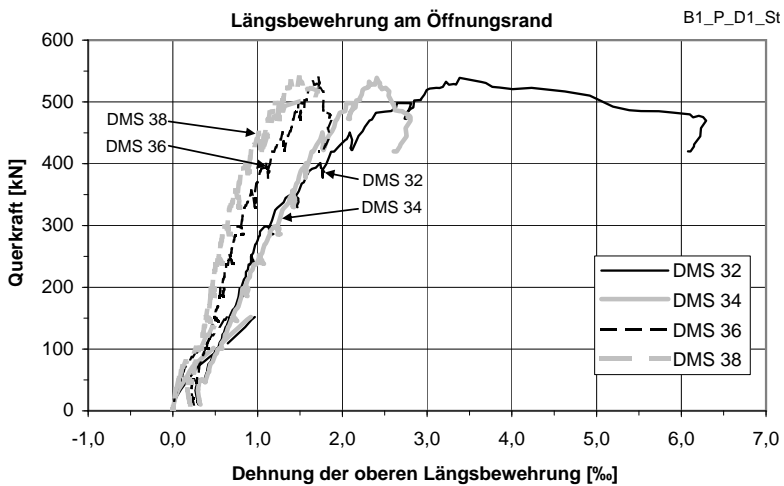
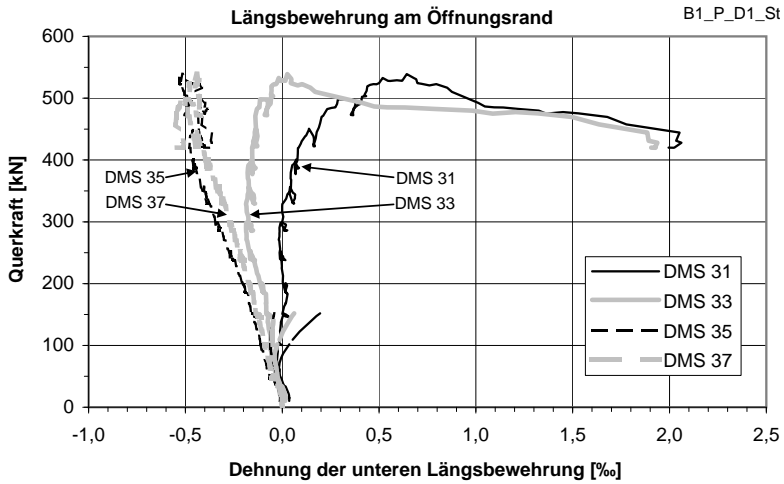
B.11.4. Doppelkopfkanker

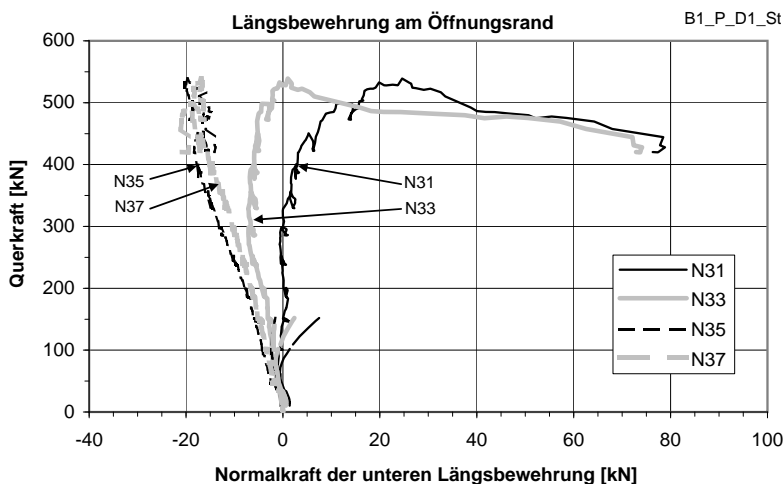
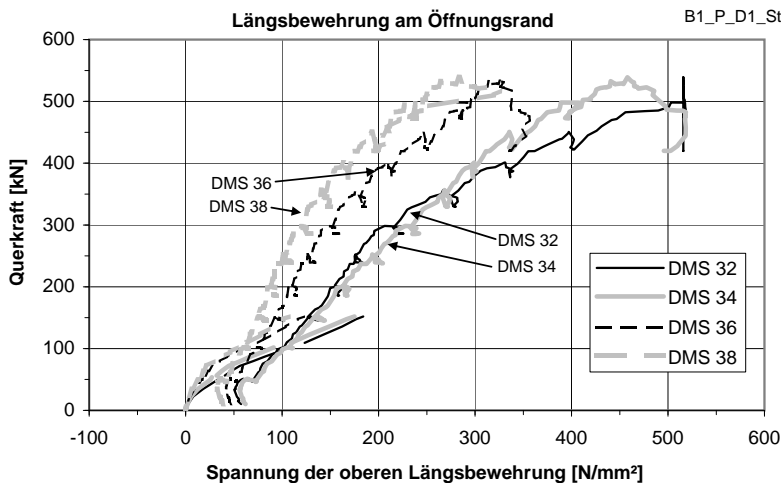
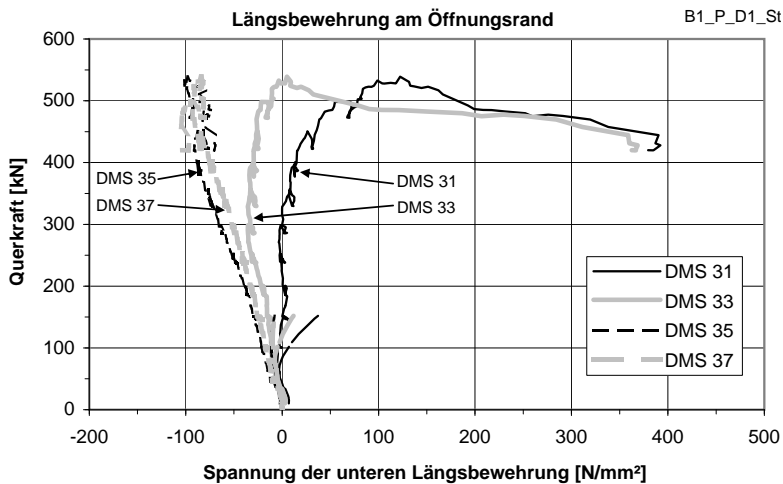


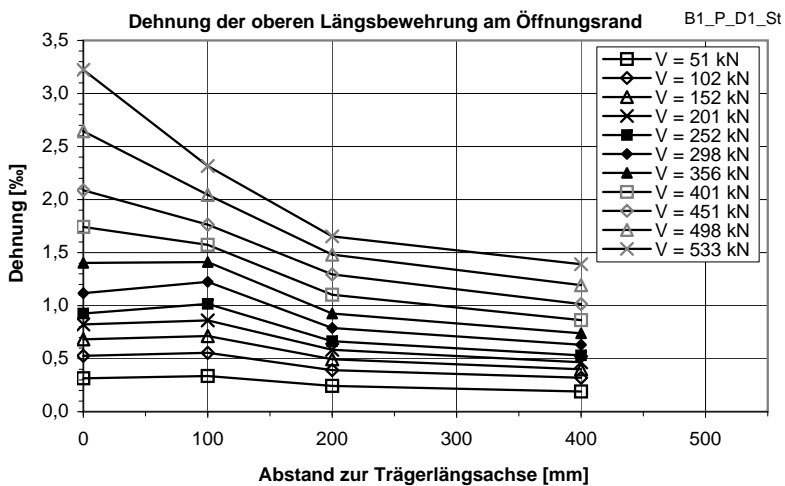
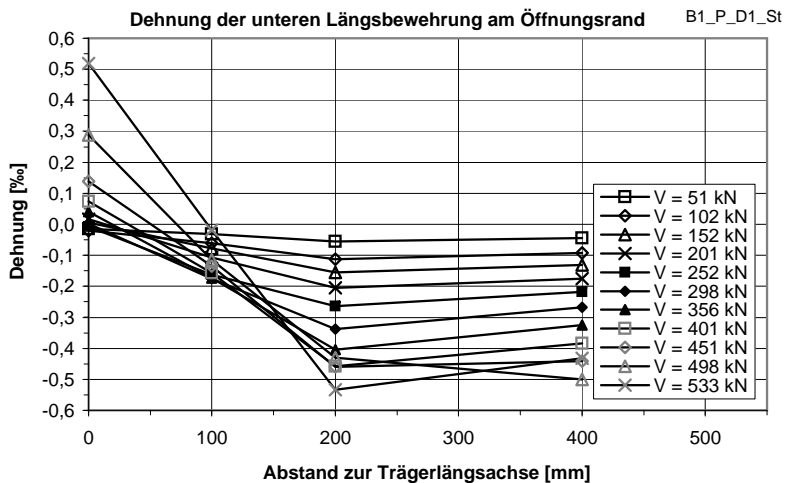
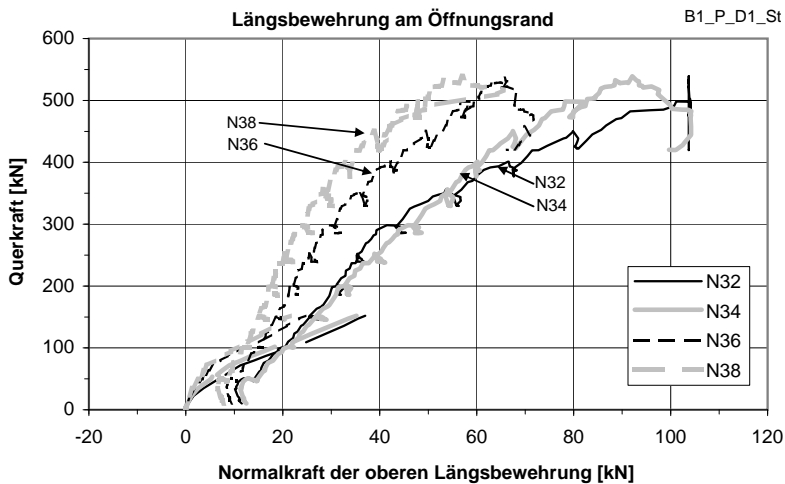


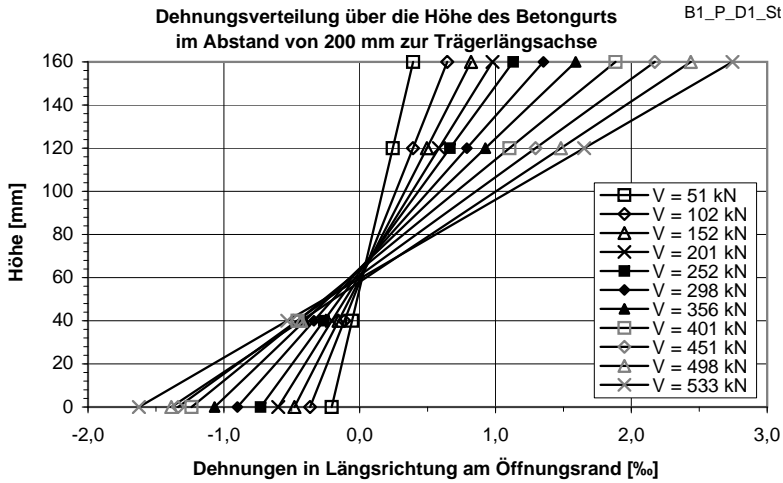
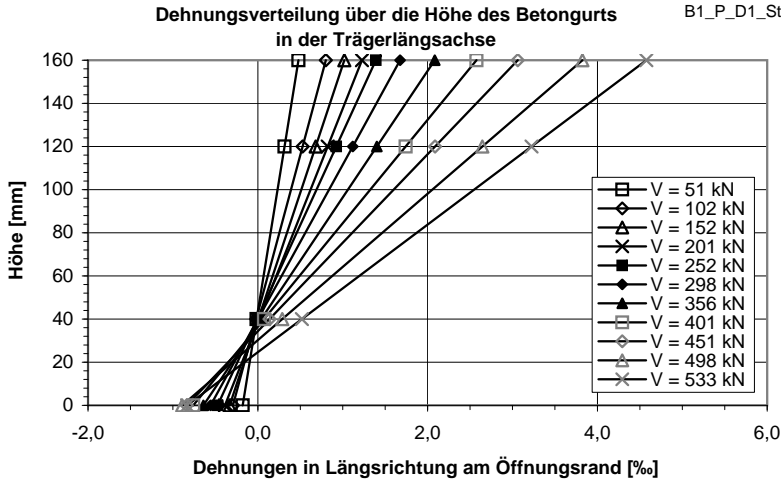


B.11.5. Längsbewehrung

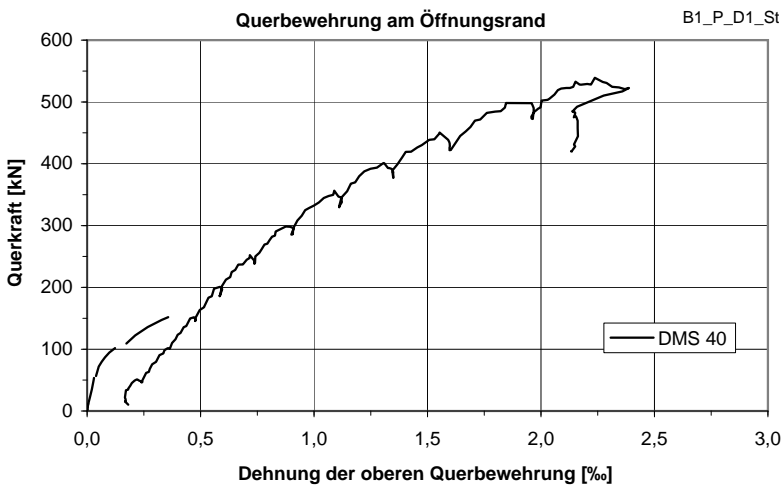
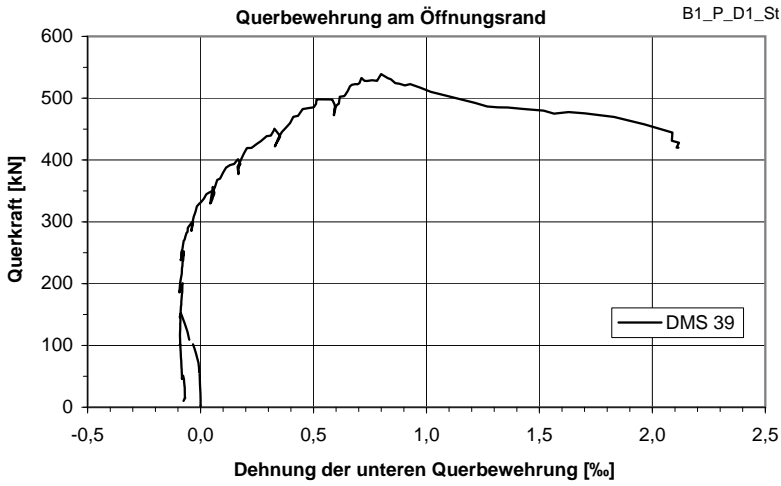


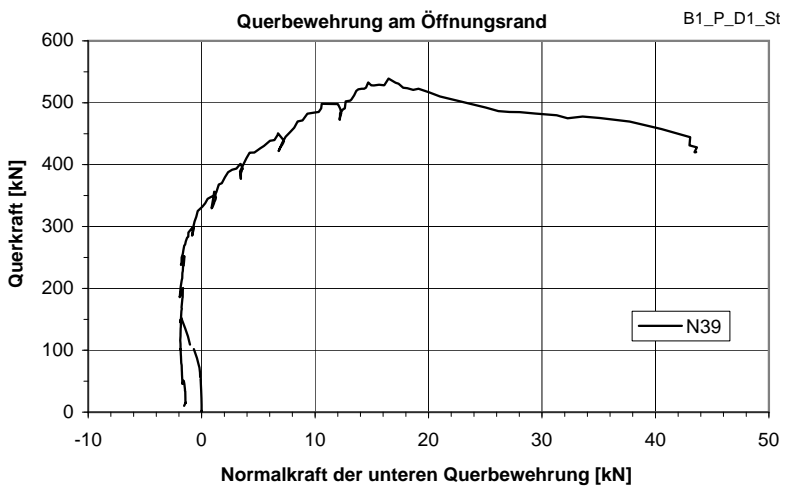
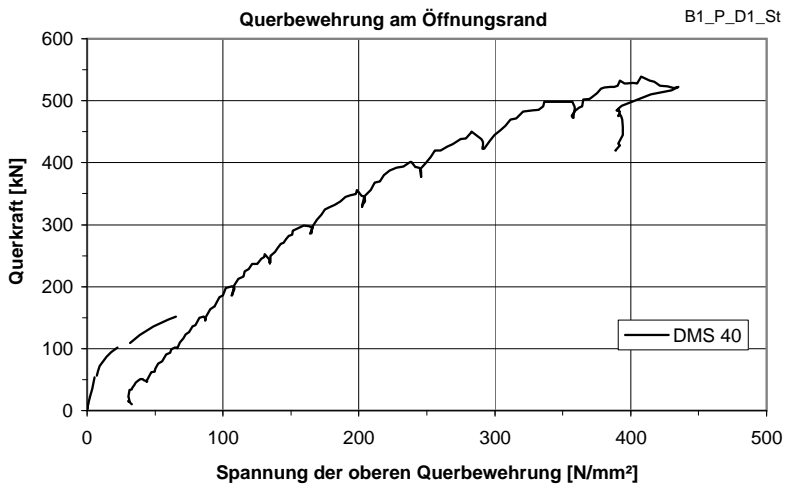
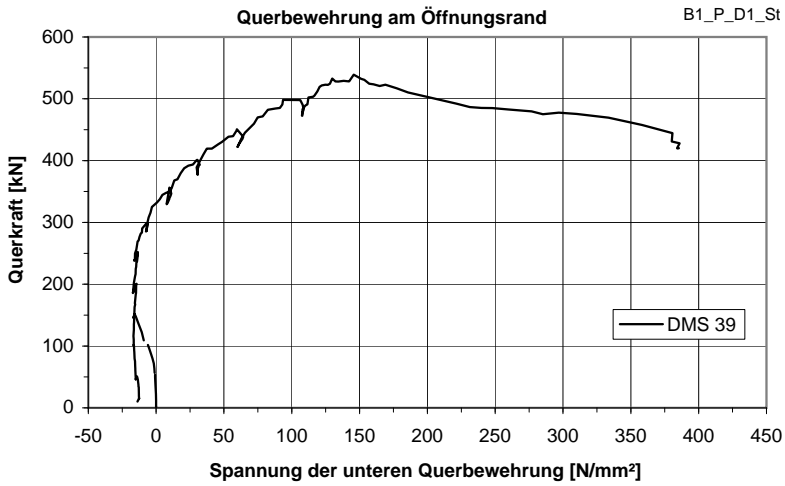


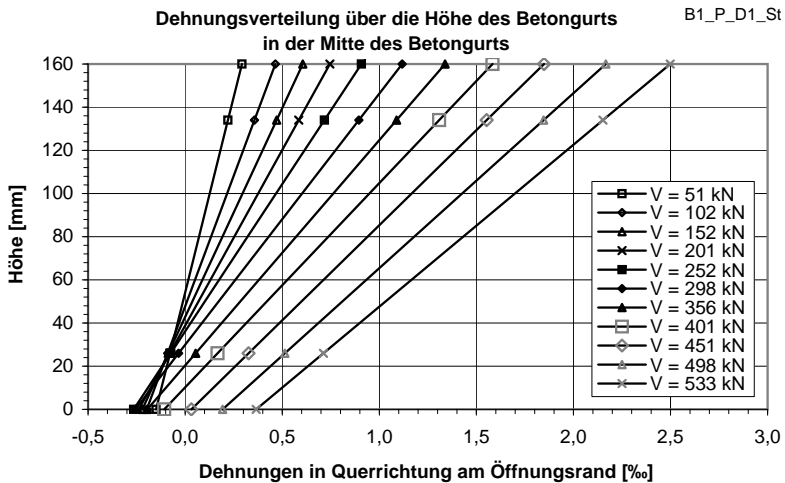
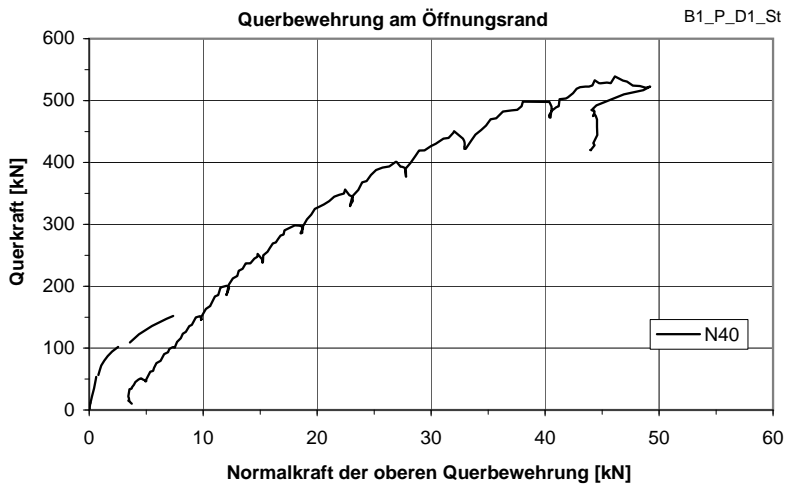




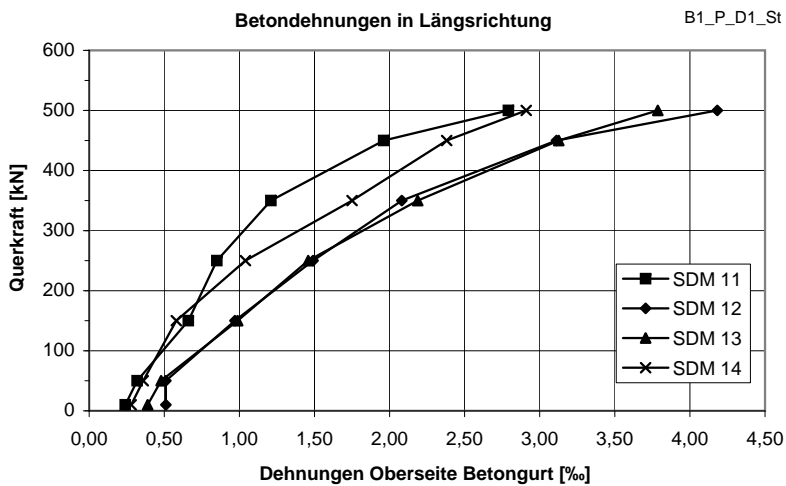
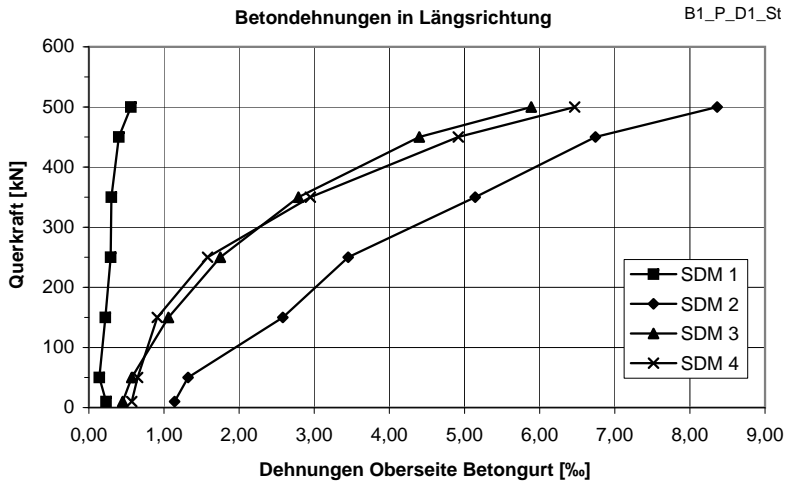
B.11.6. Querbewehrung

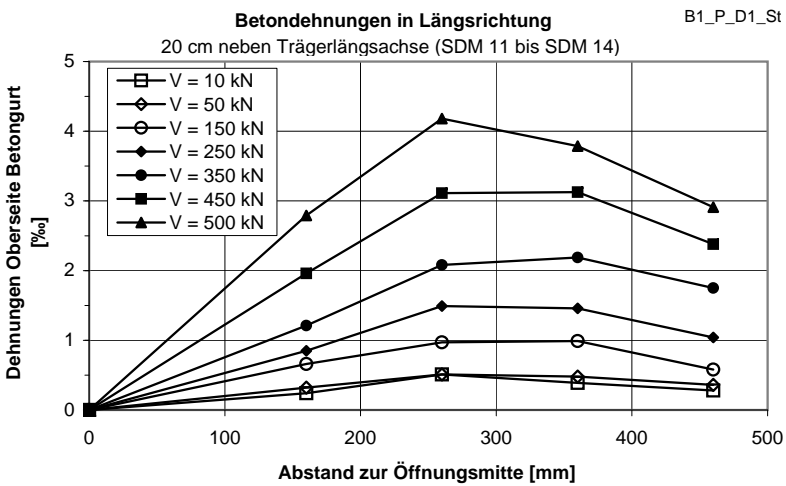
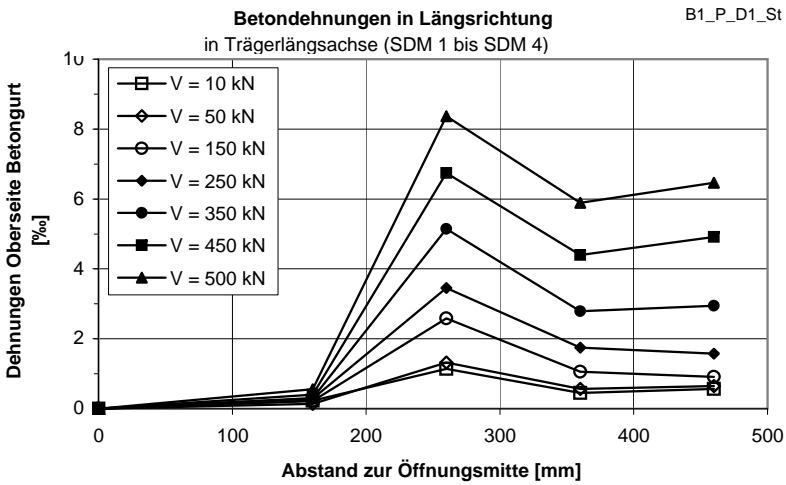
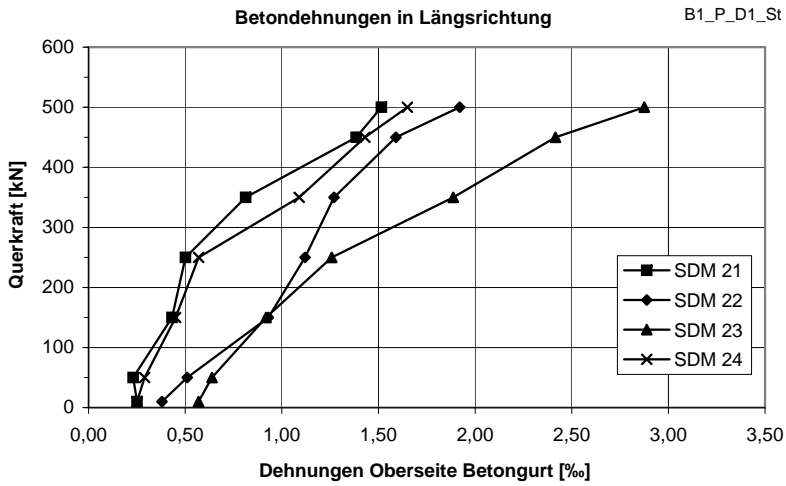


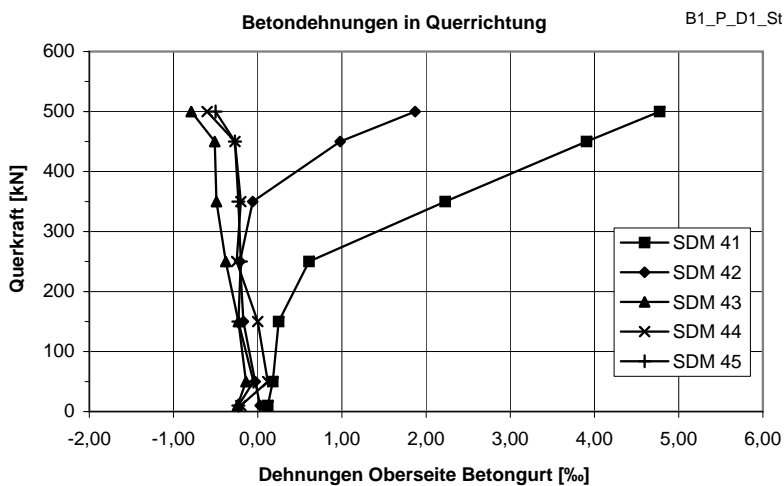
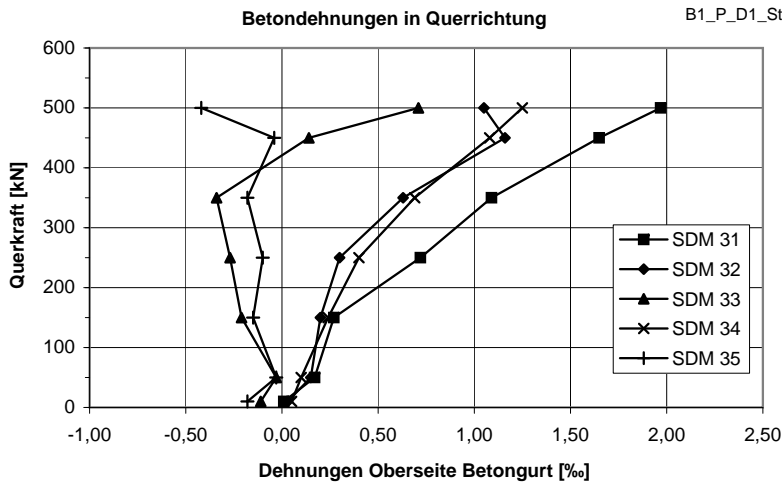
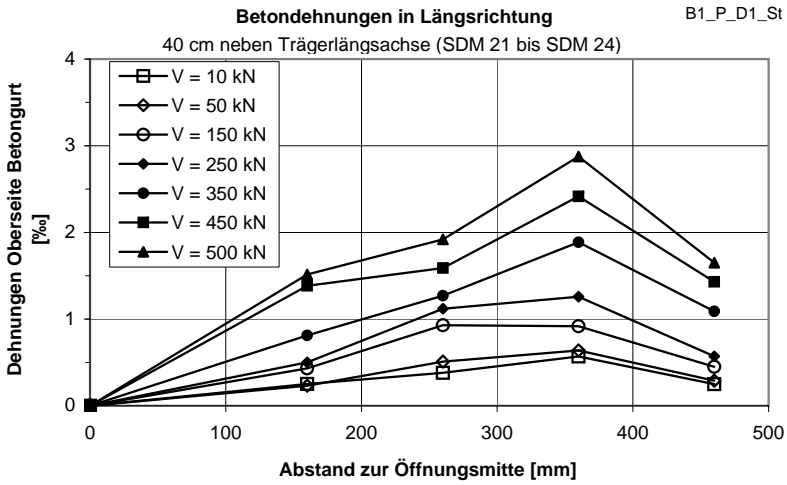


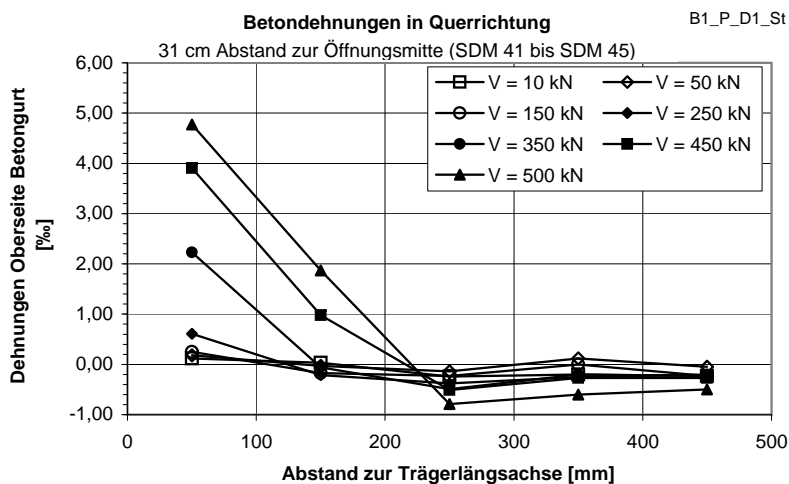
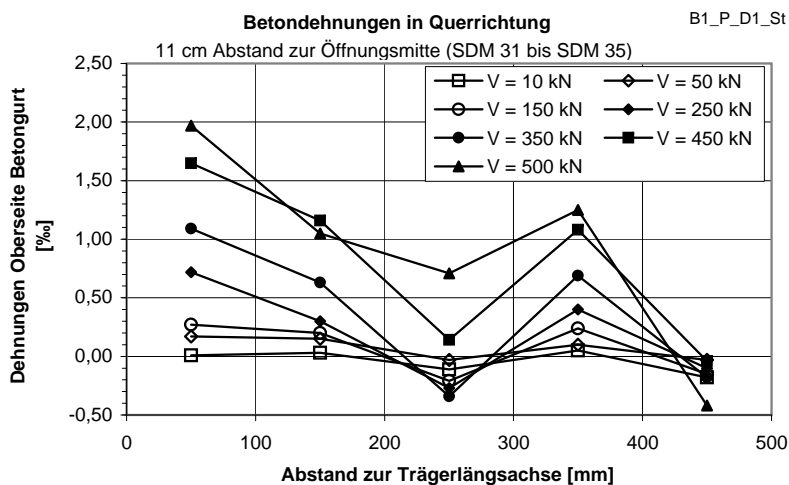
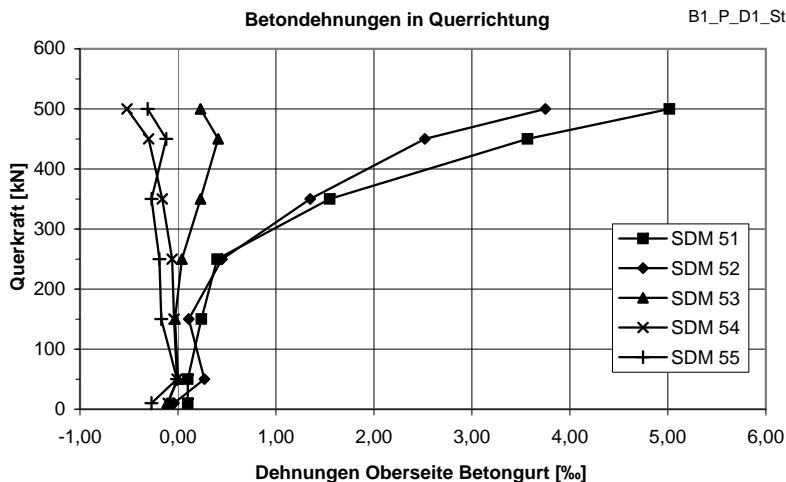


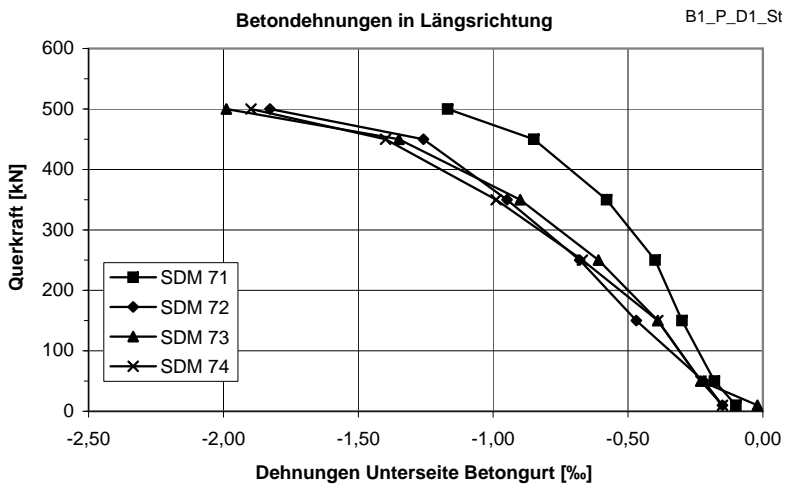
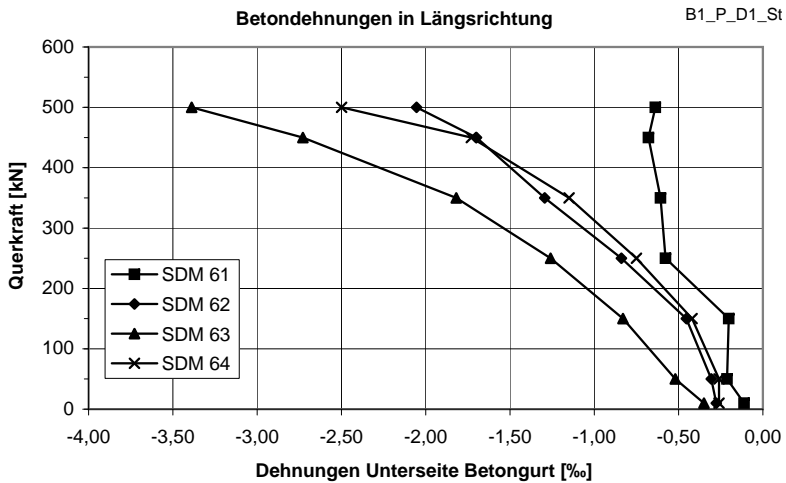
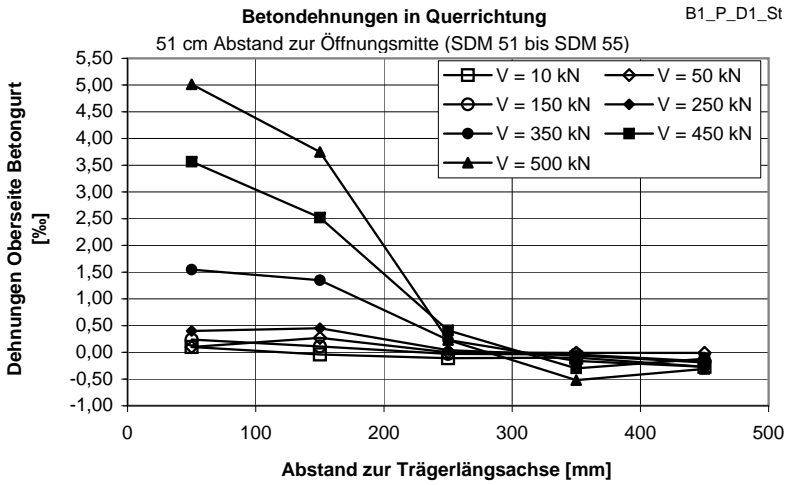
B.11.7. Betondehnungen

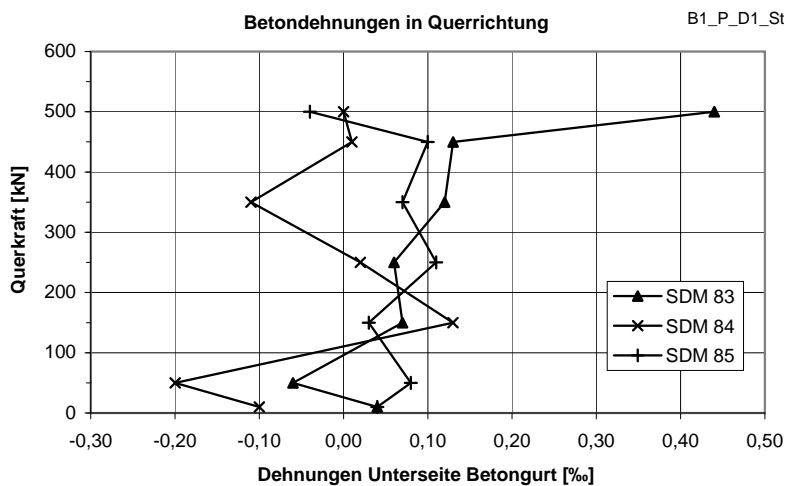
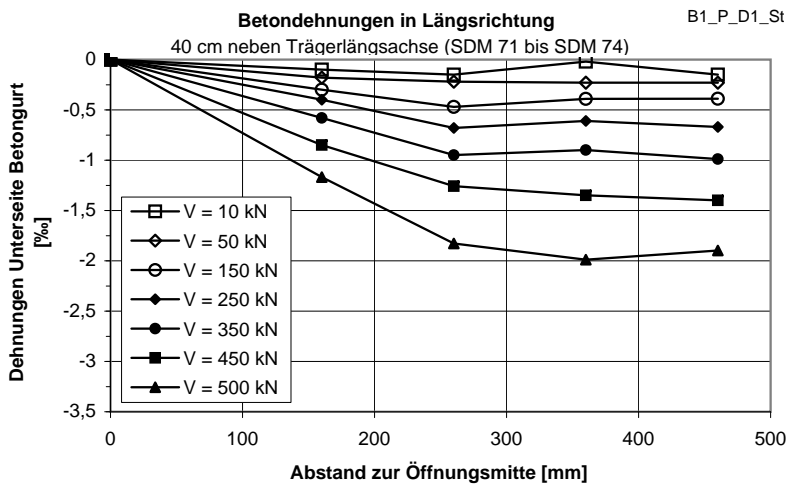
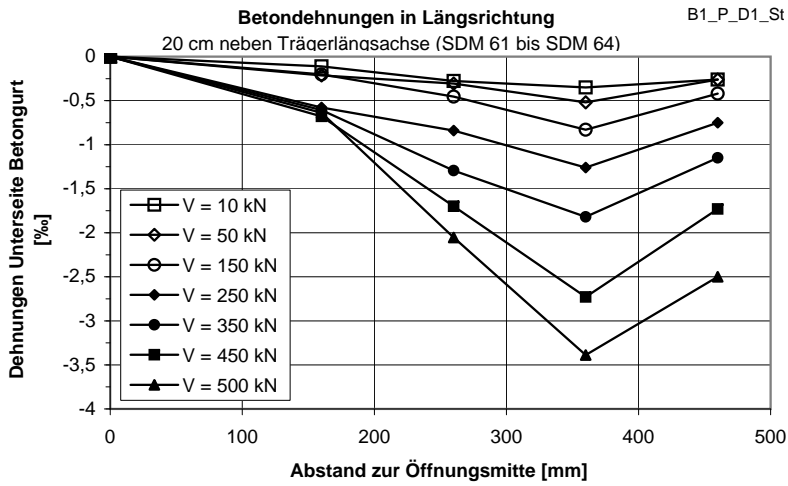


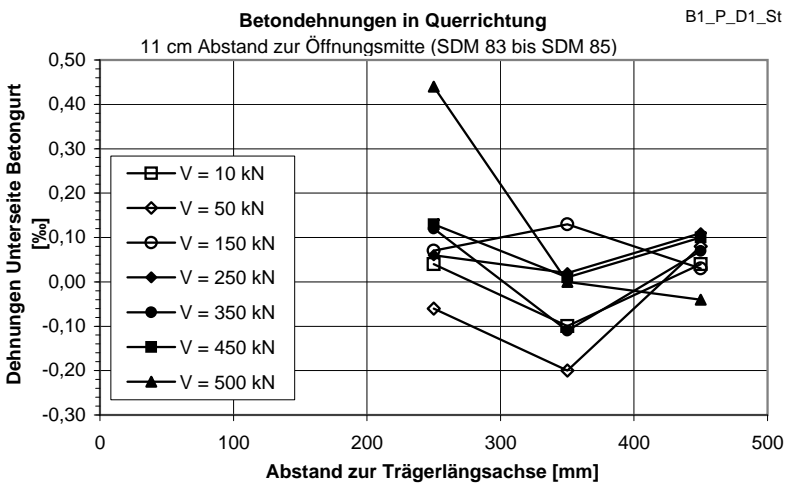
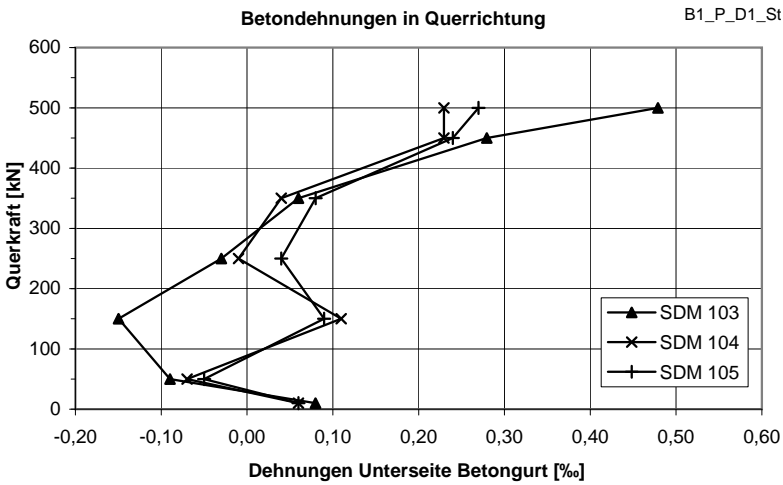
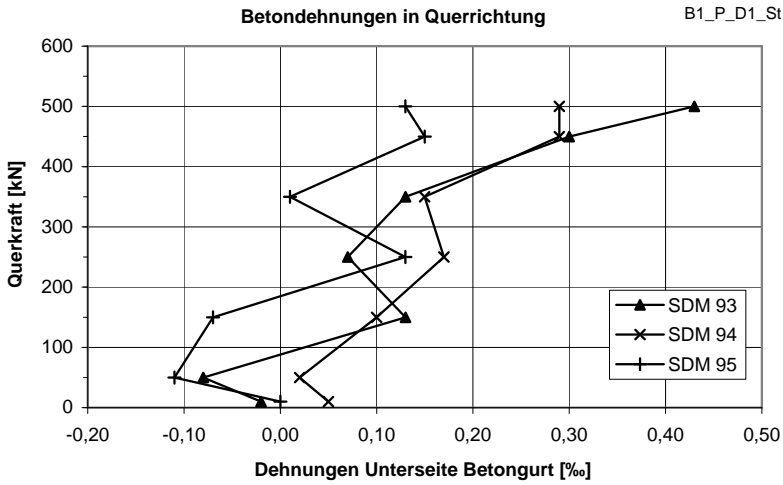


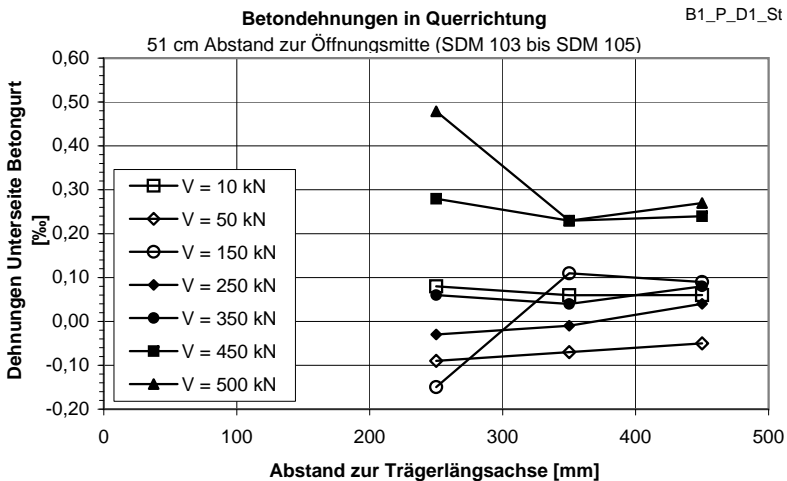
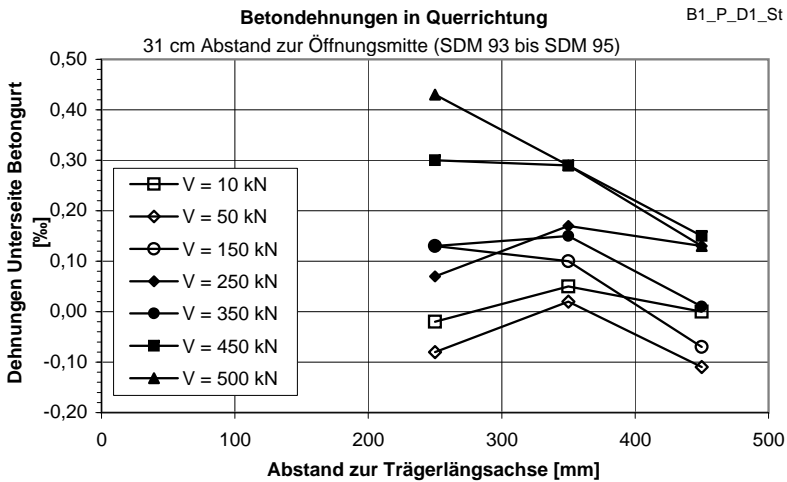






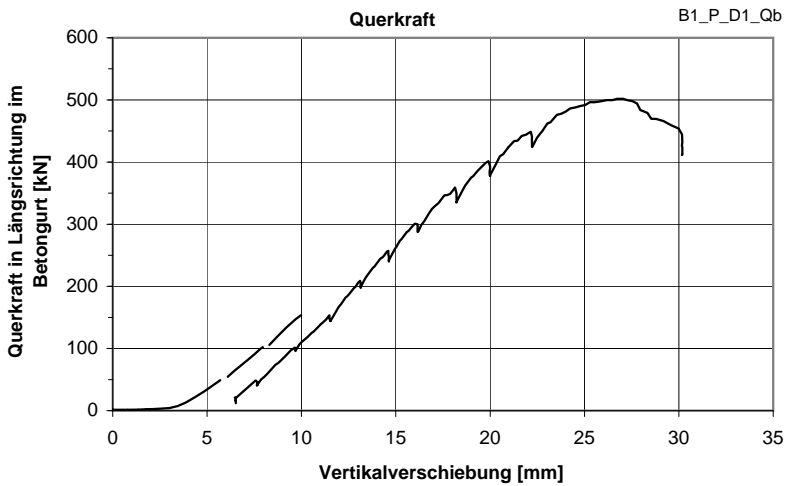
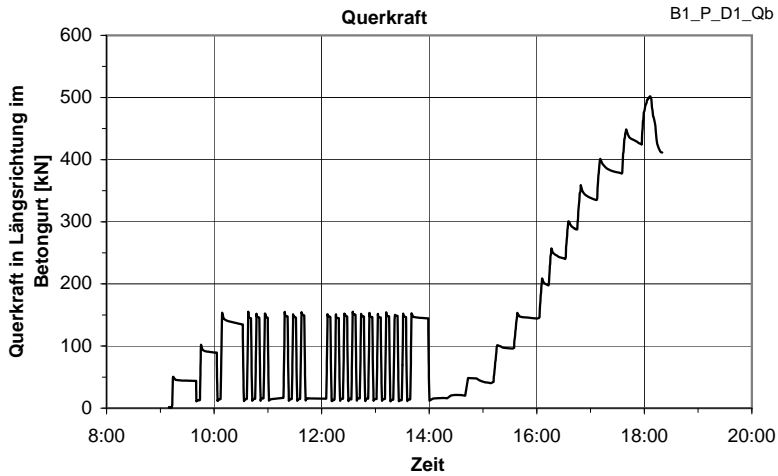


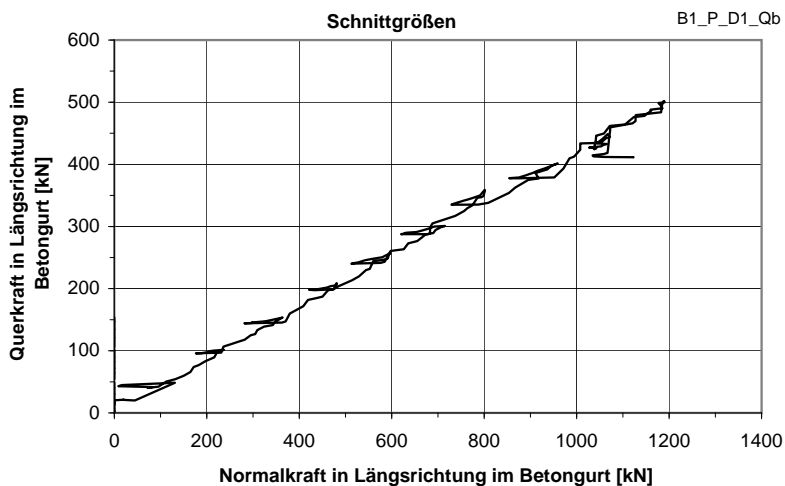
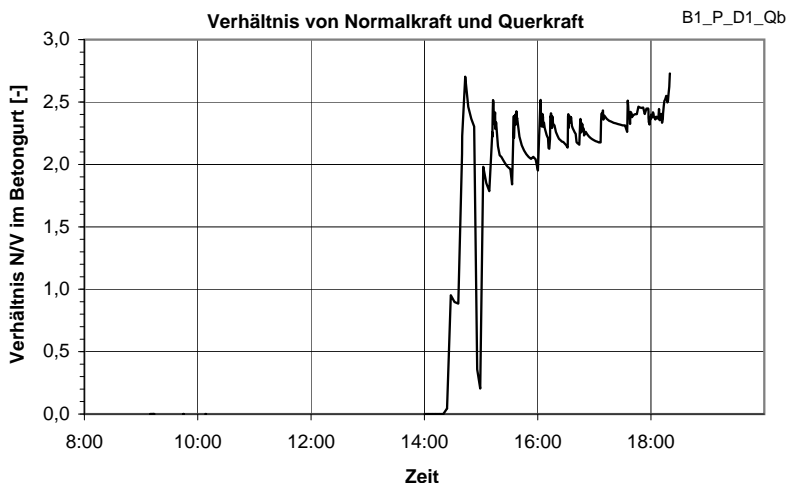
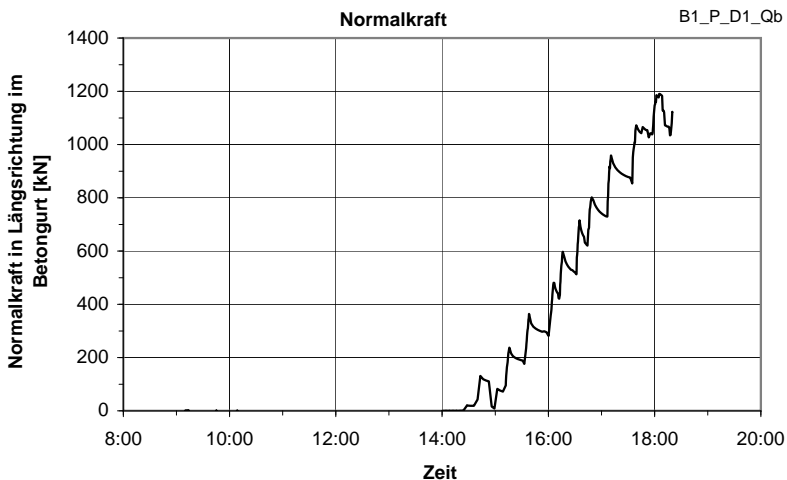


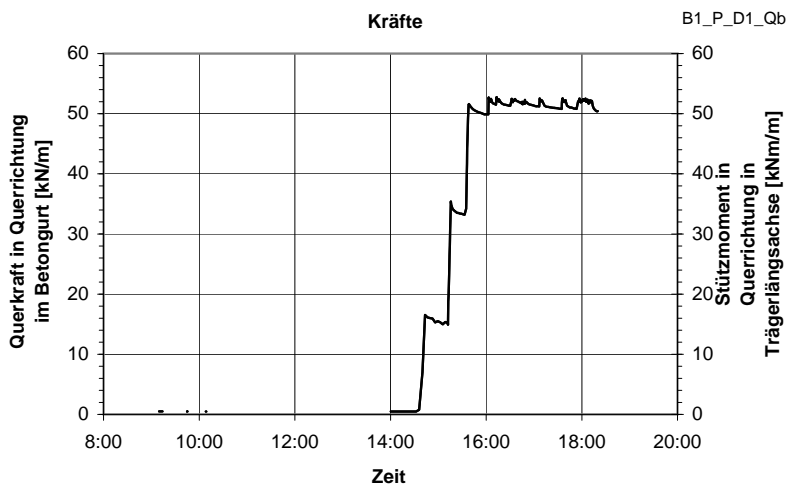
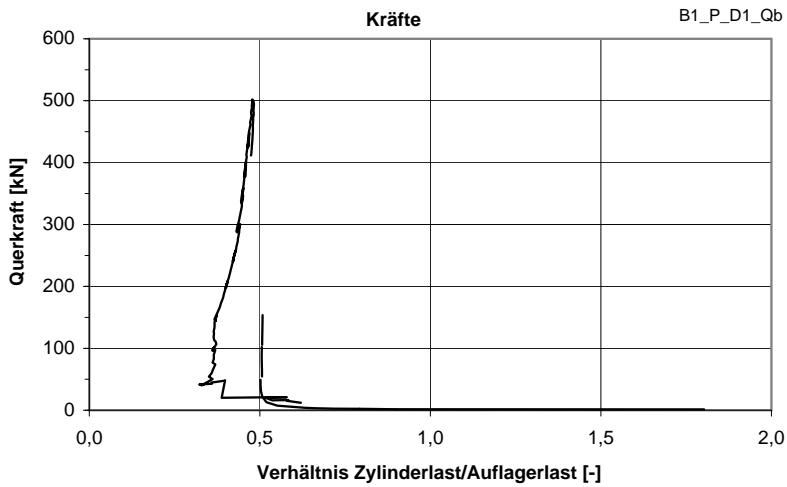
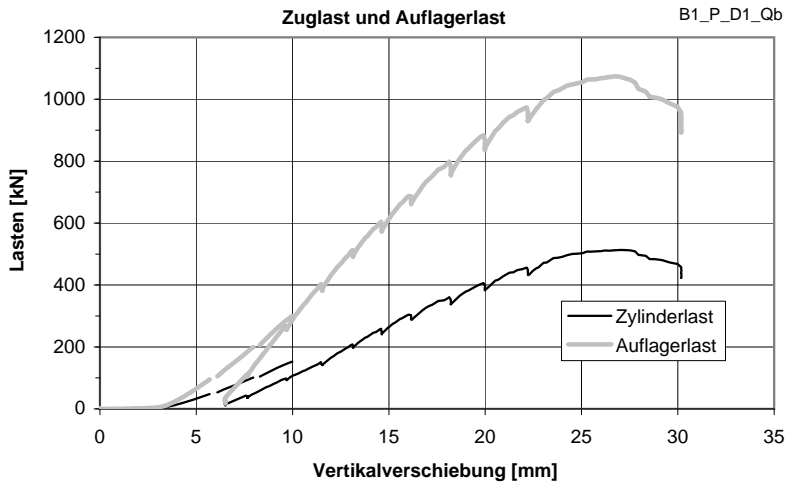


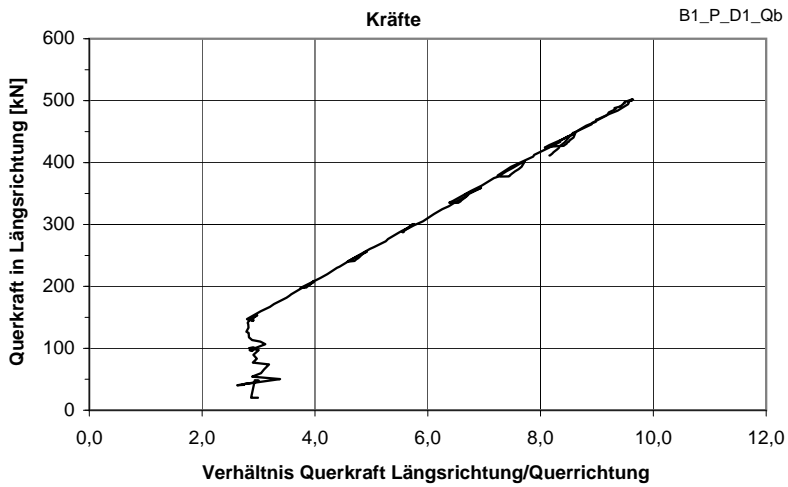
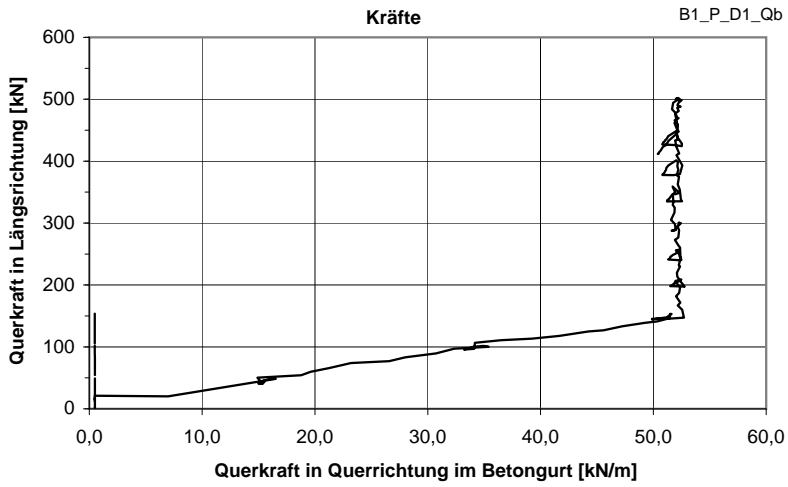
B.12. Versuch B1_P_D1_Qb

B.12.1. Kräfte

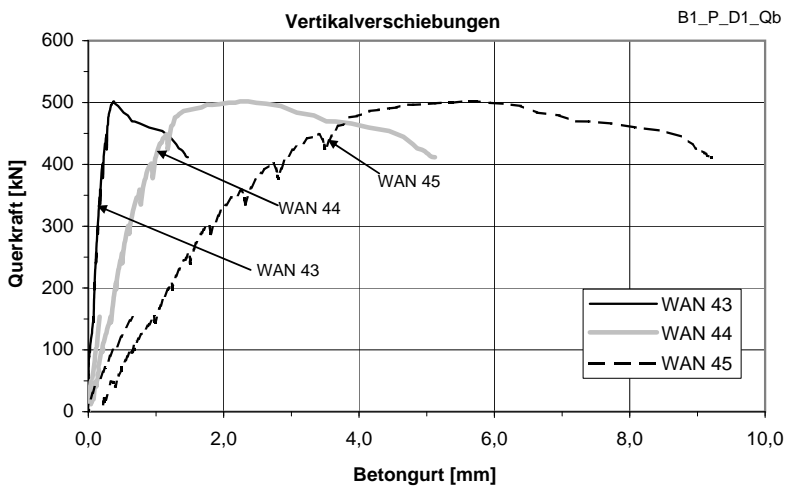
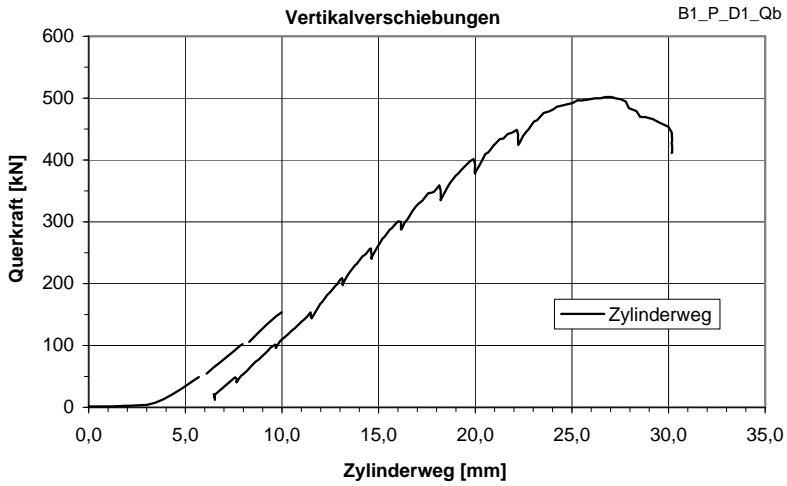


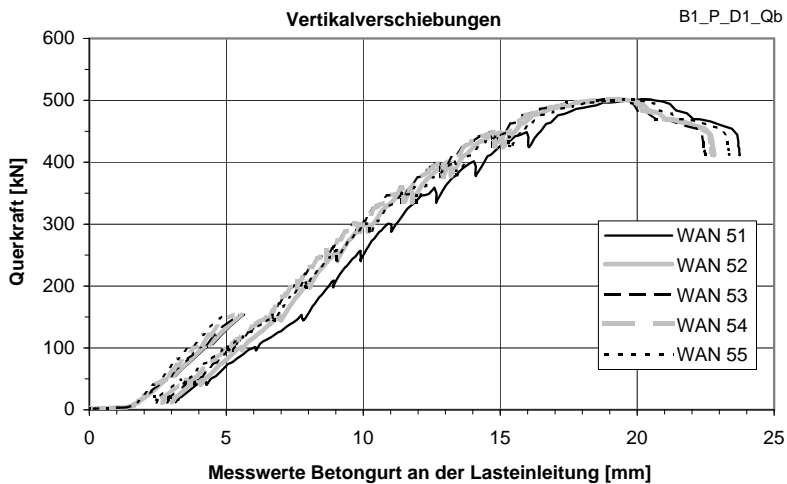
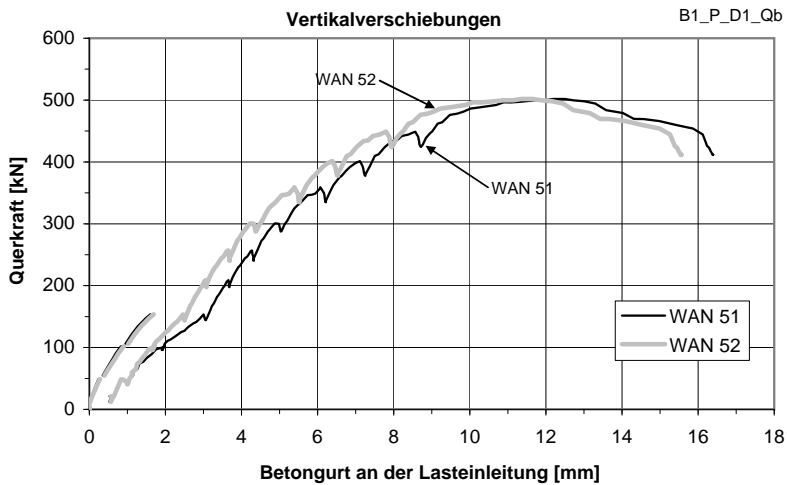
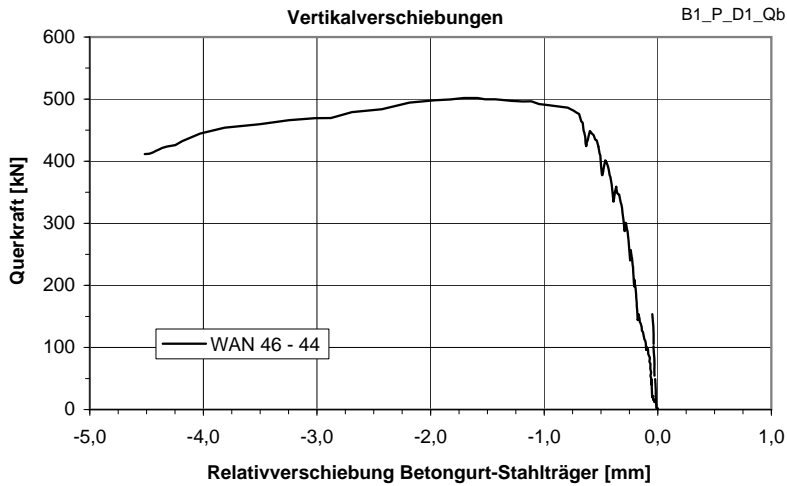




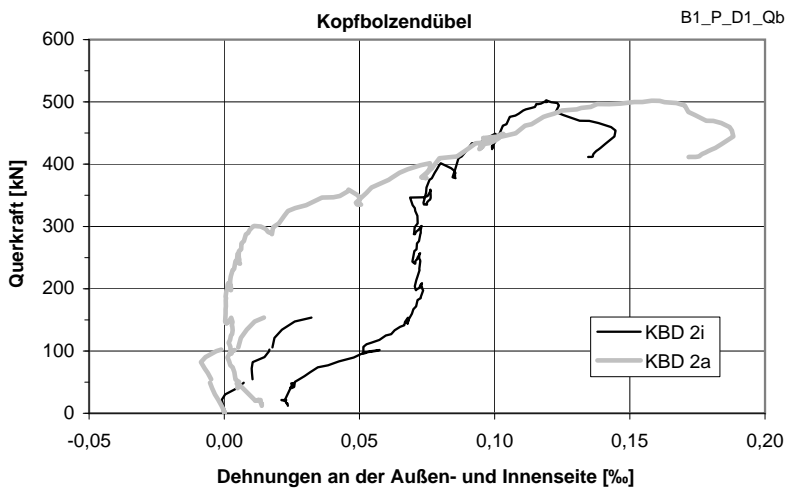
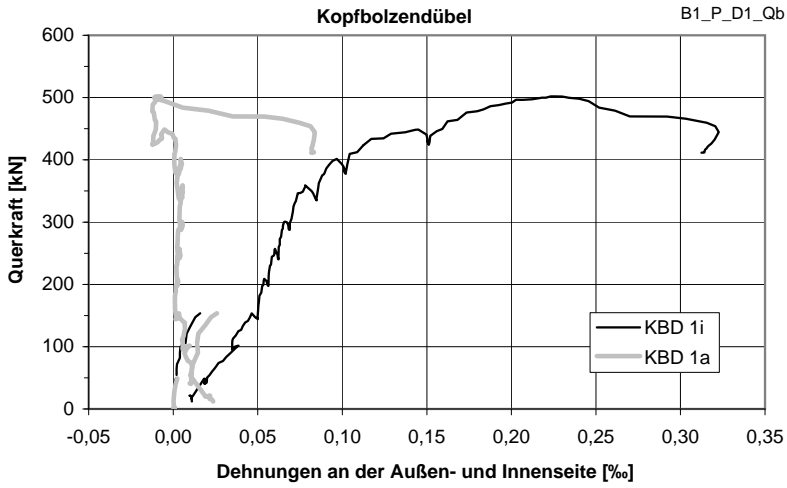


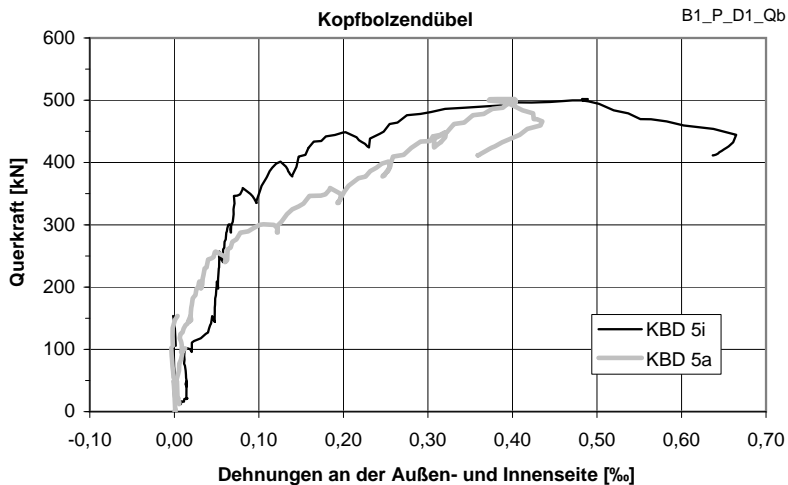
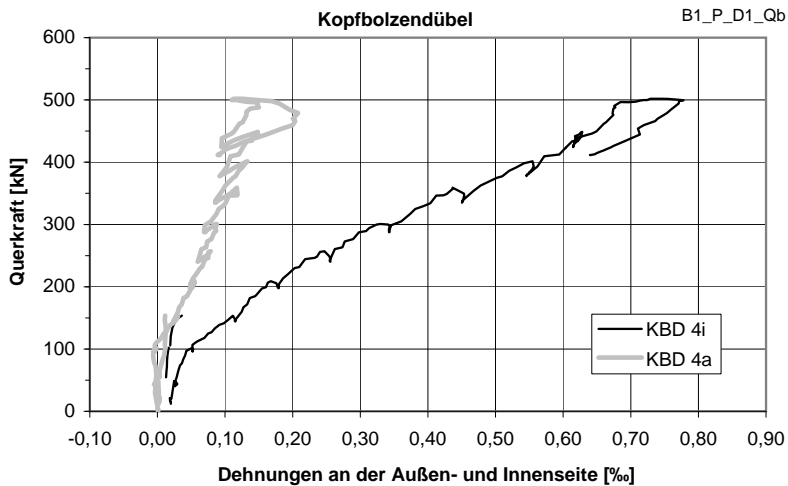
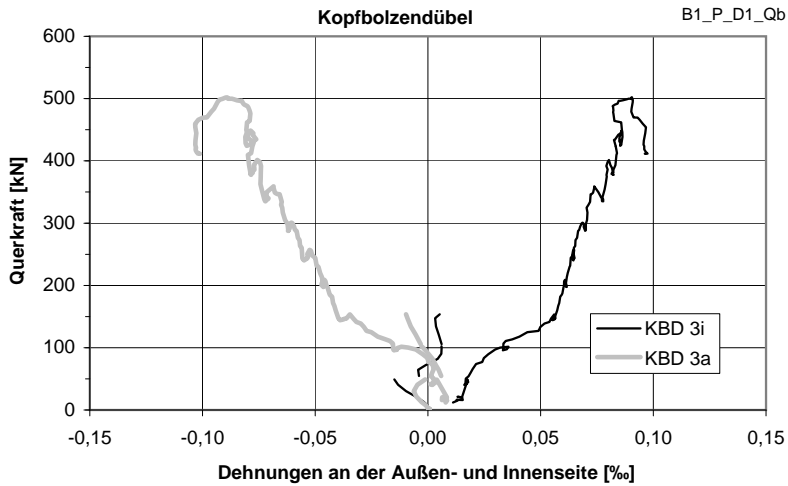
B.12.2. Verformungen

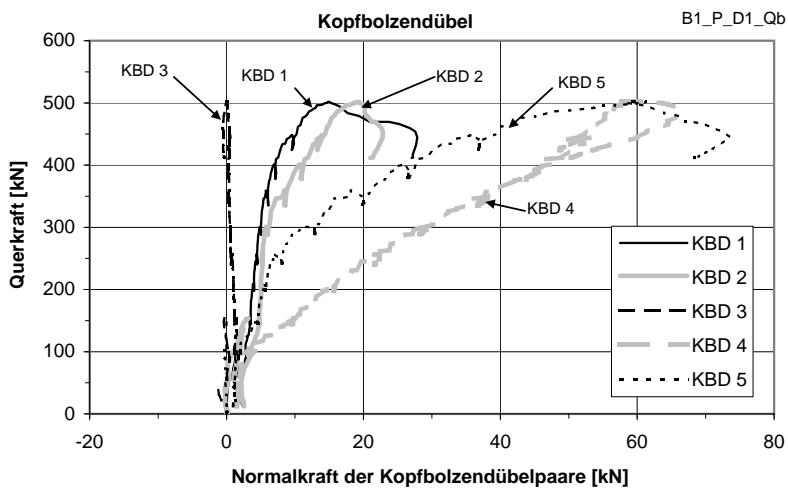
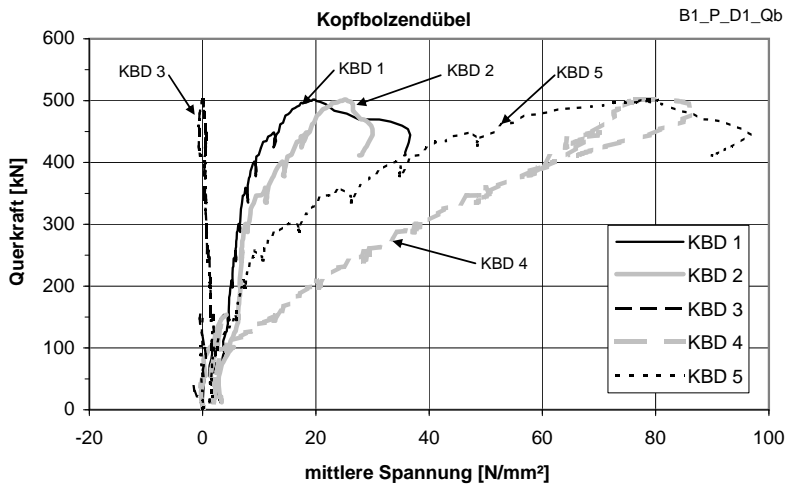
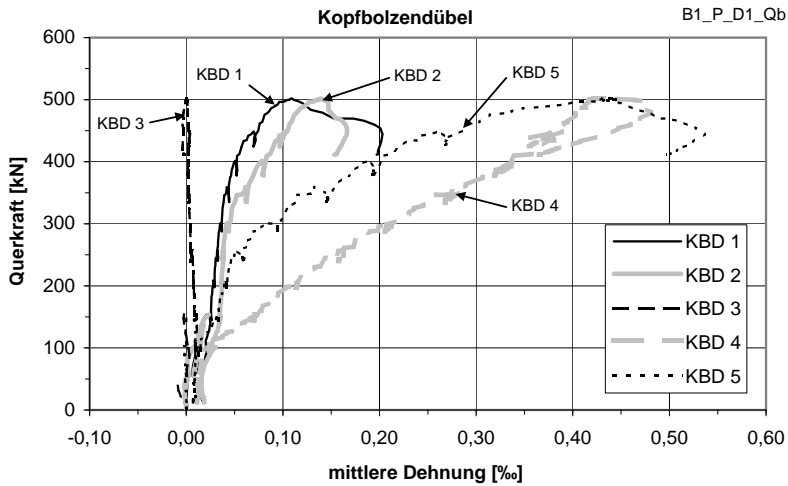




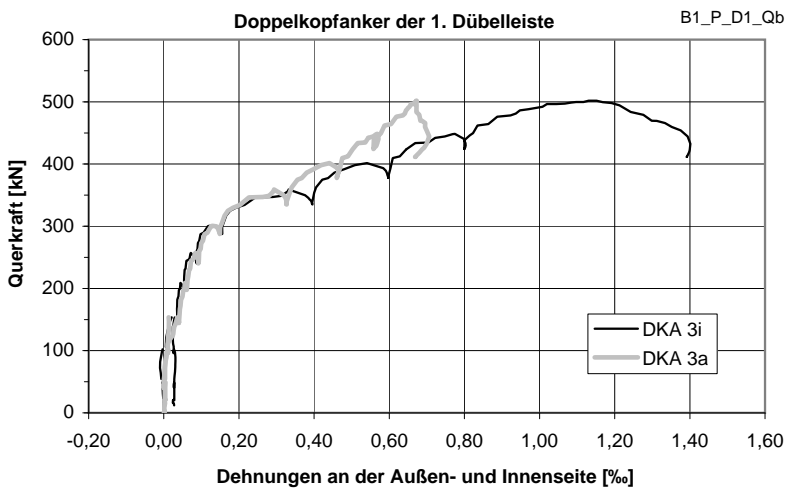
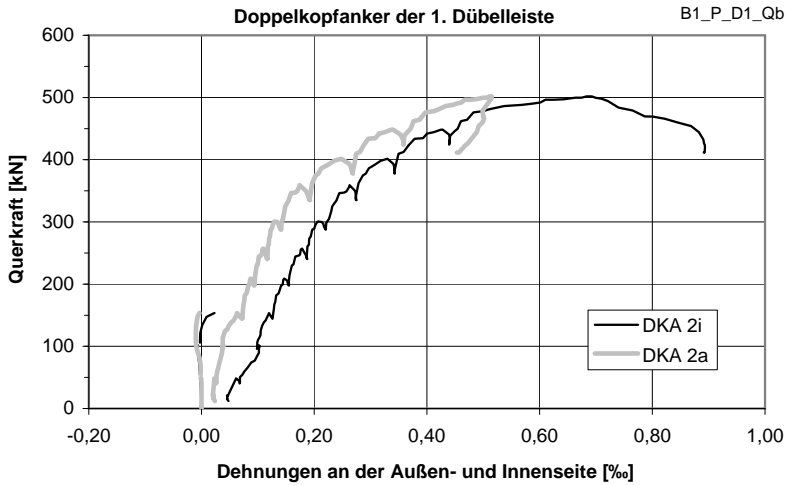
B.12.3. Kopfbolzendübel

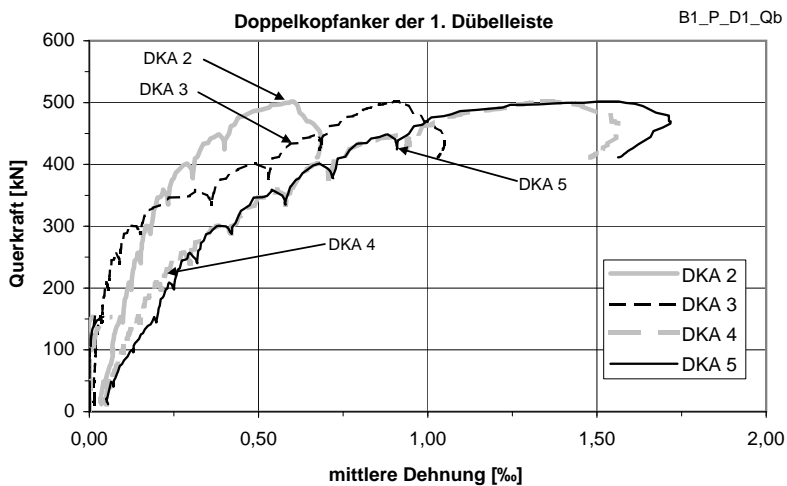
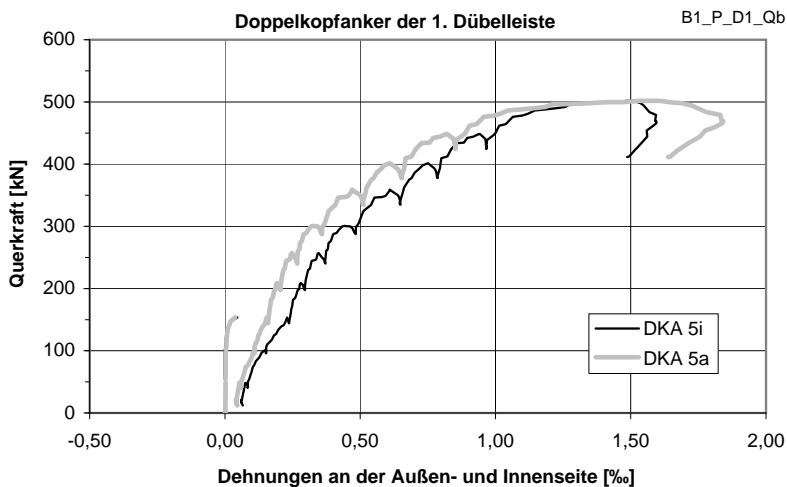
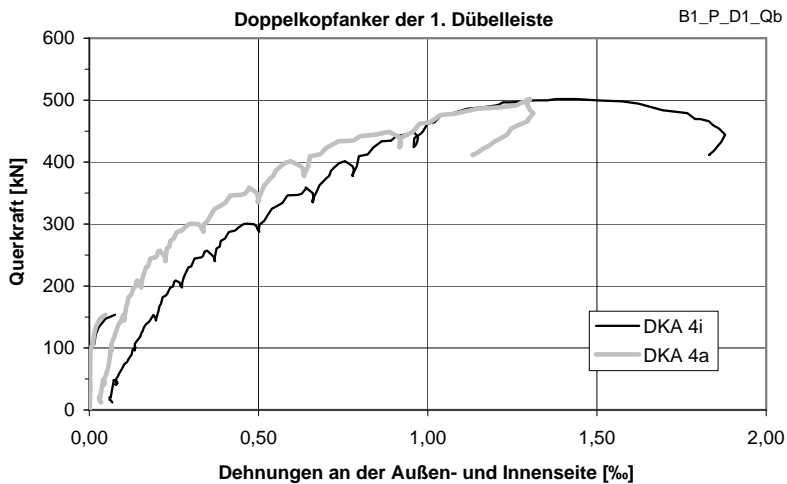


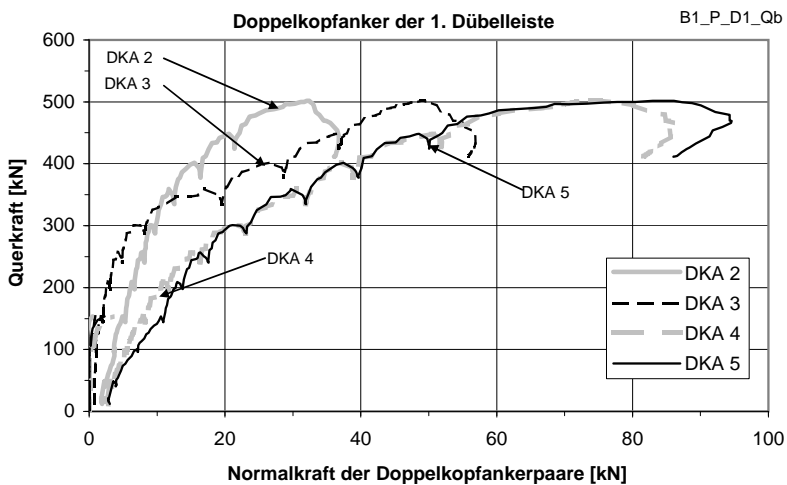
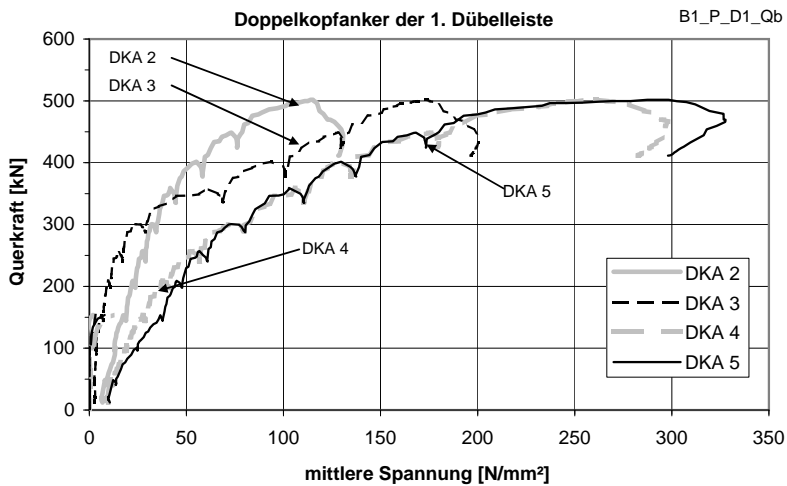




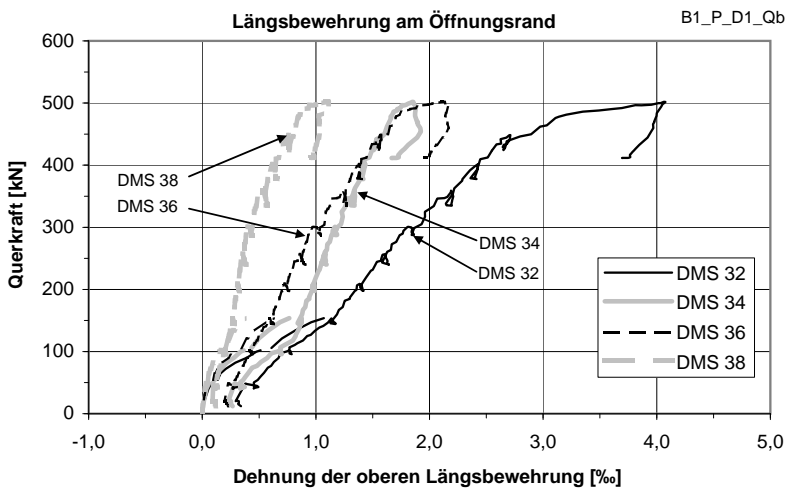
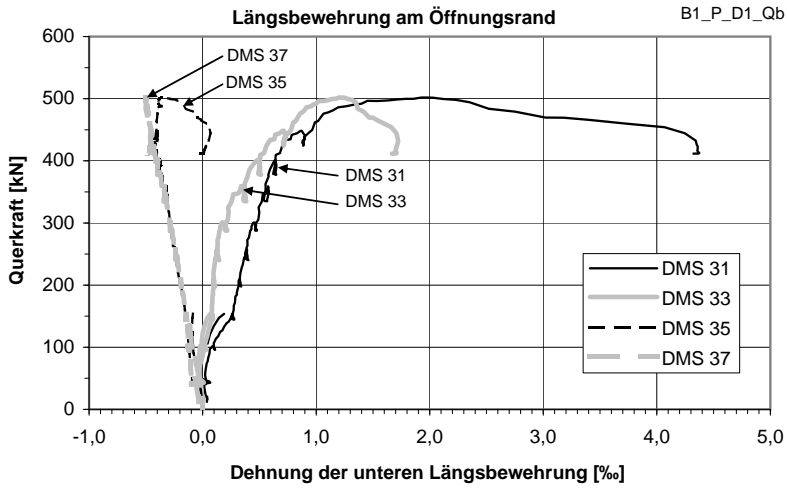
B.12.4. Doppelkopfkanker

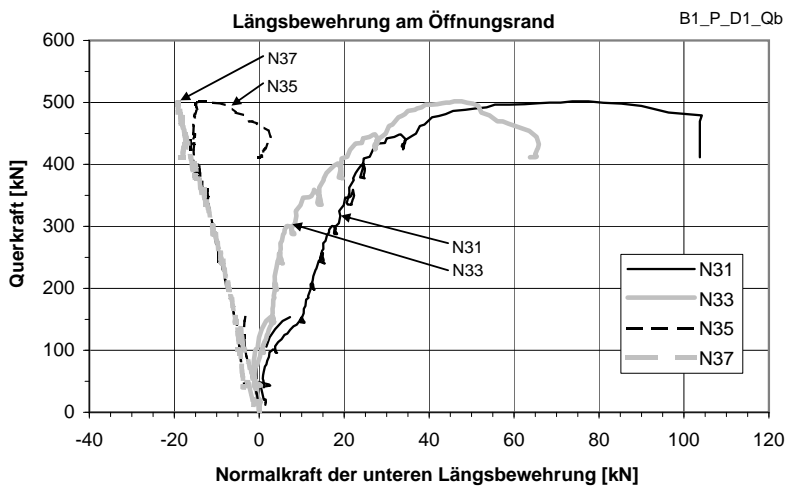
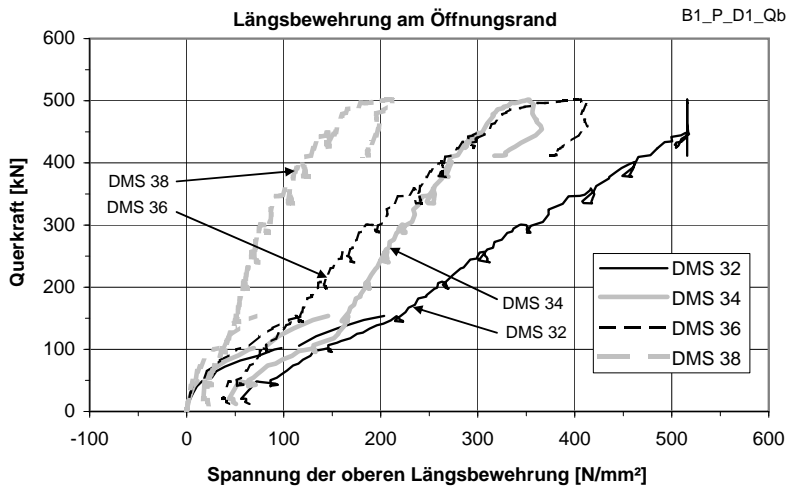
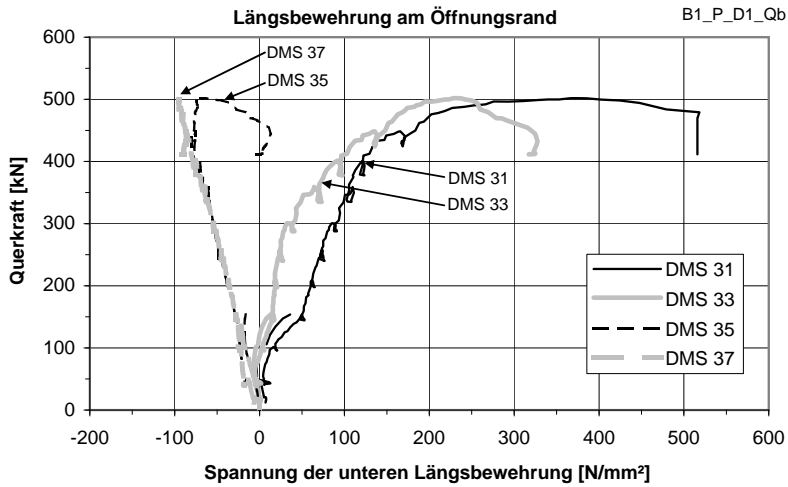


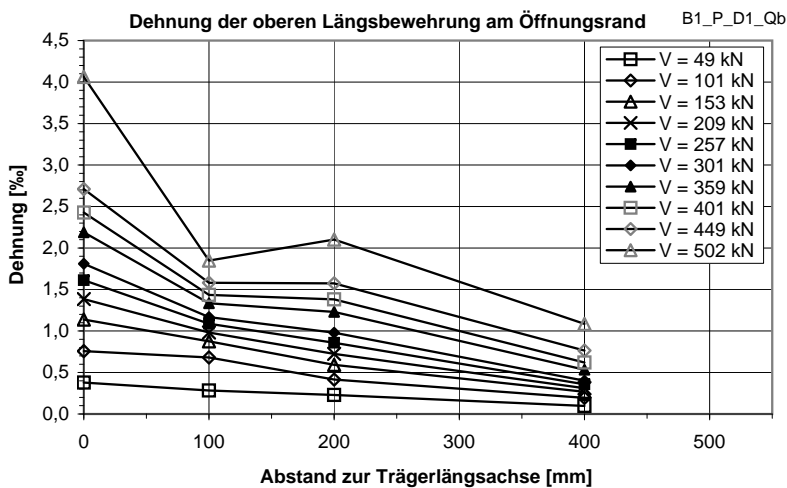
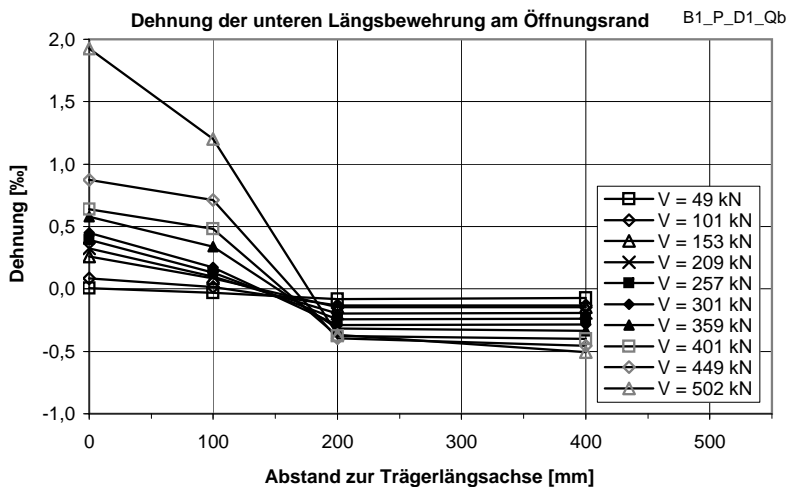
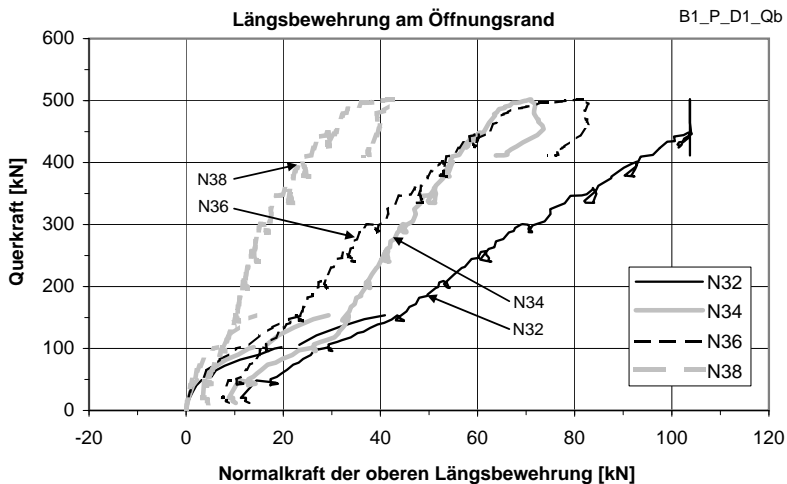


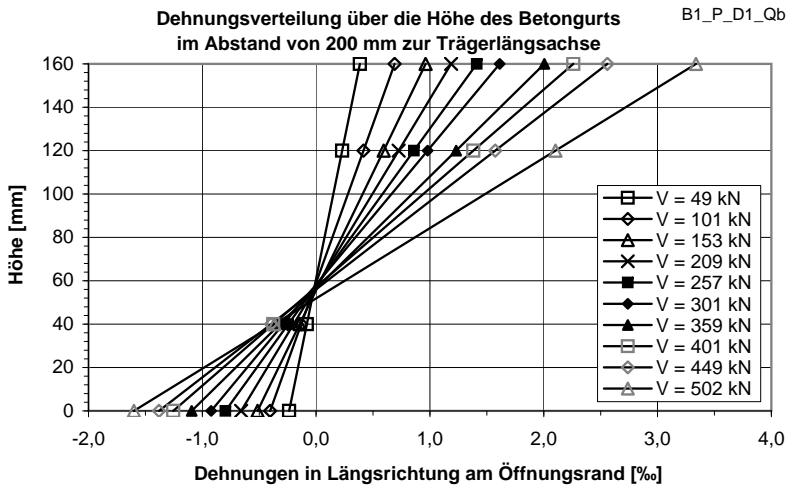
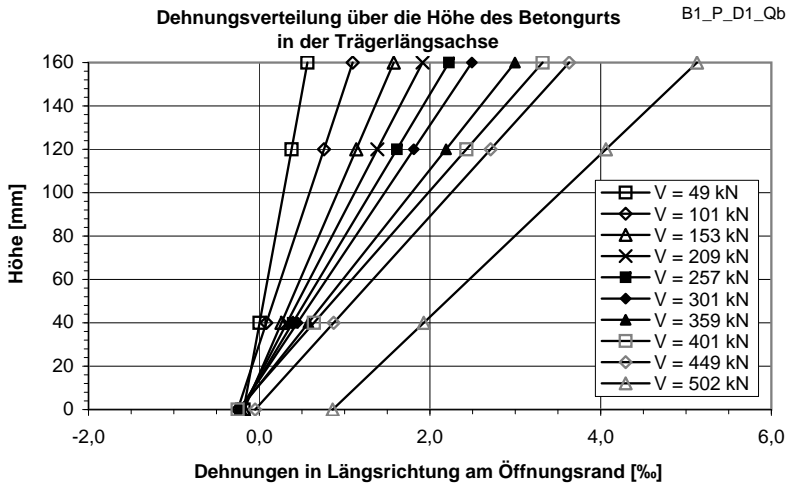


B.12.5. Längsbewehrung

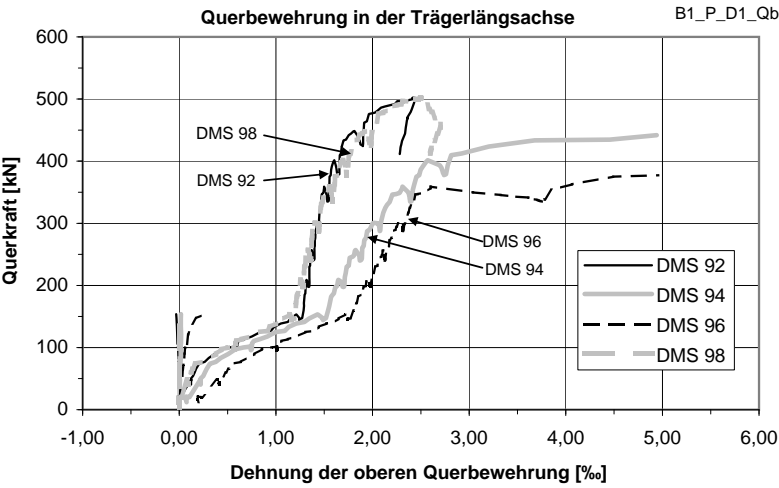
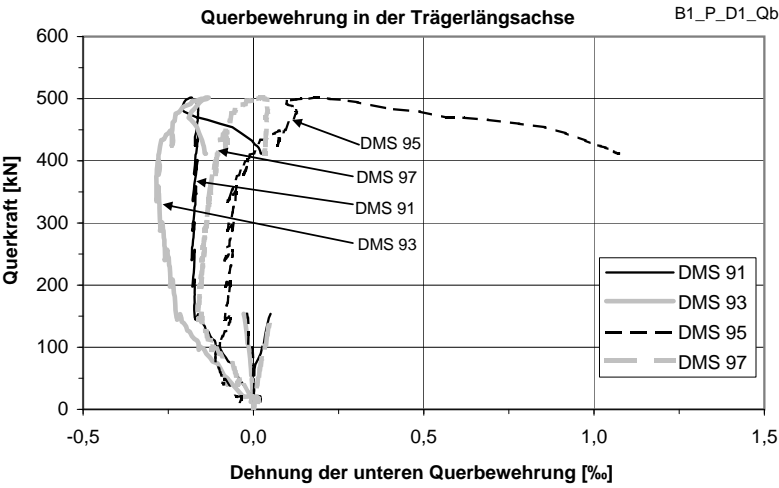


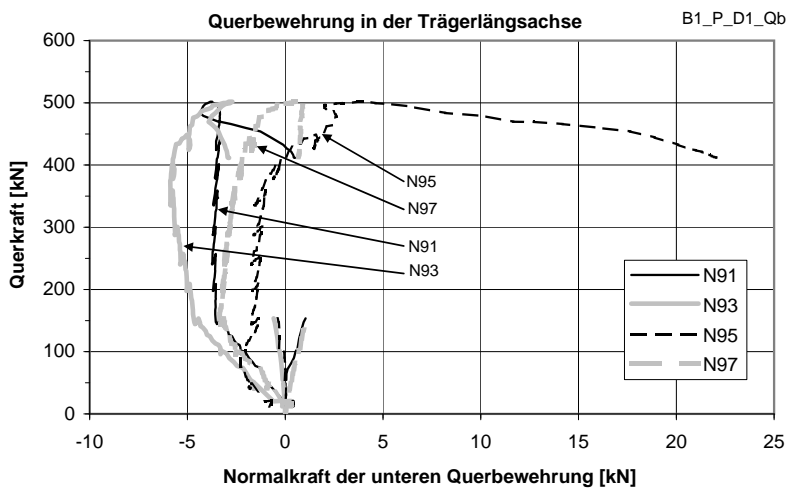
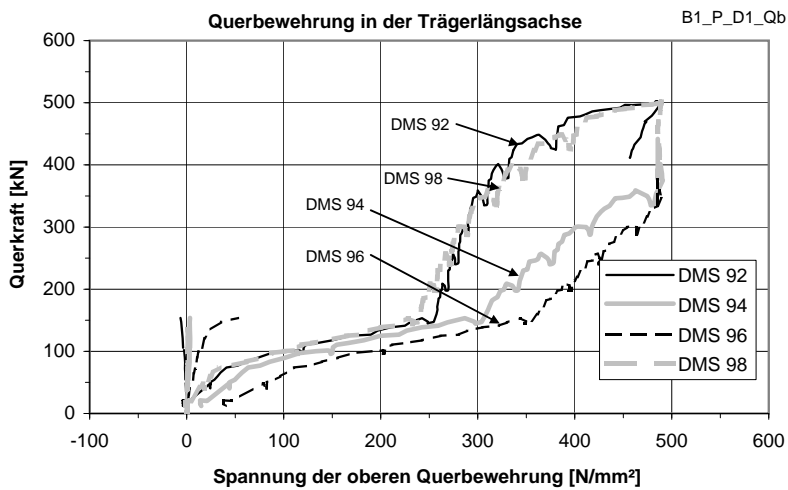
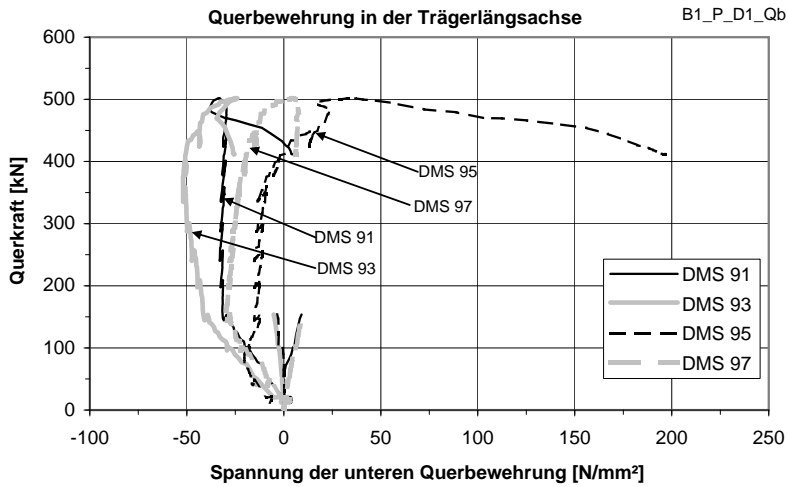


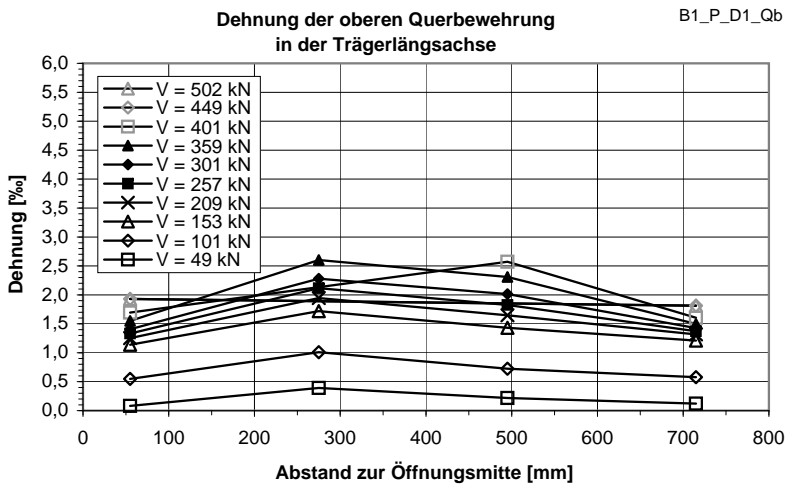
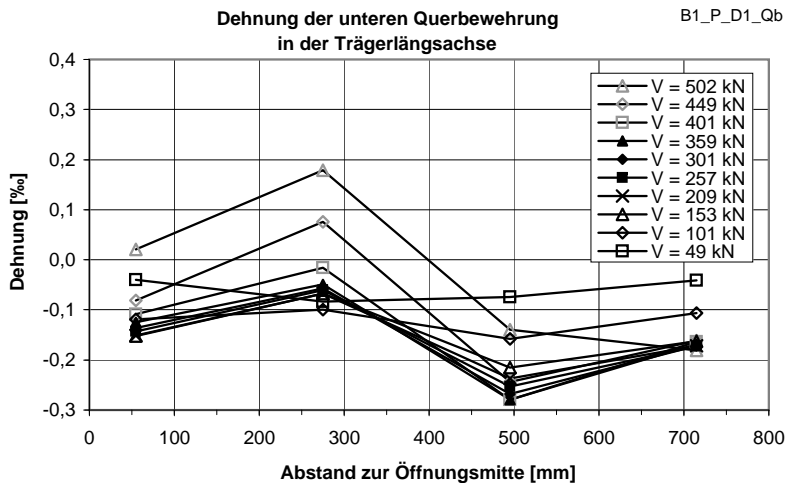
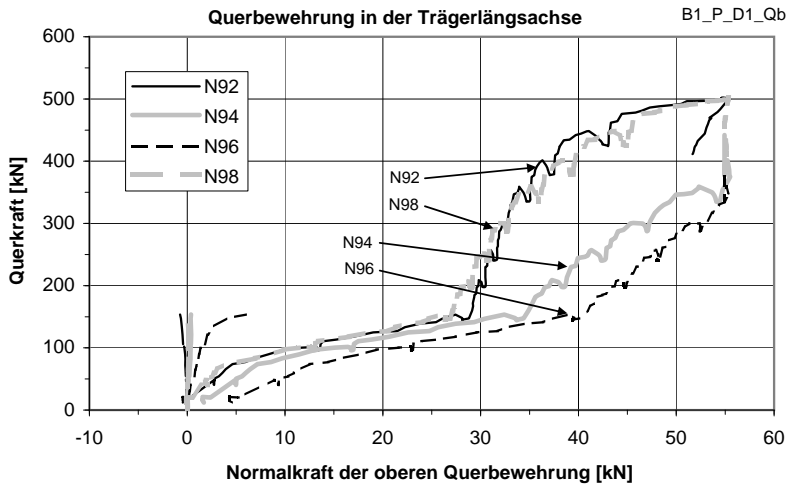


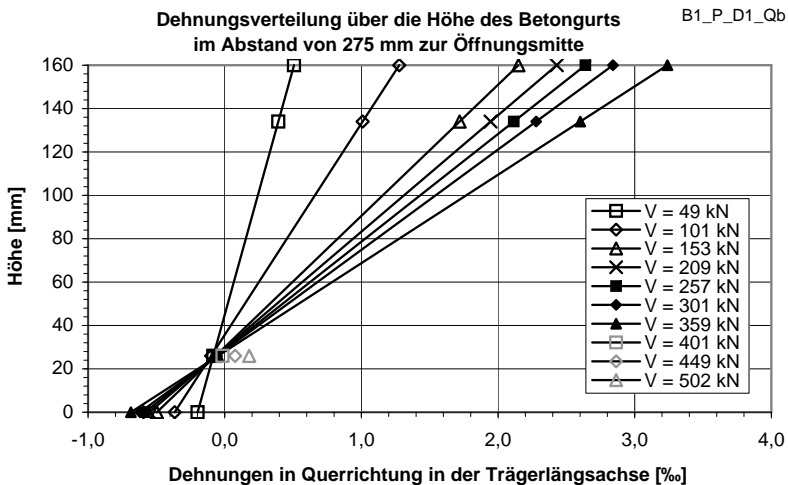
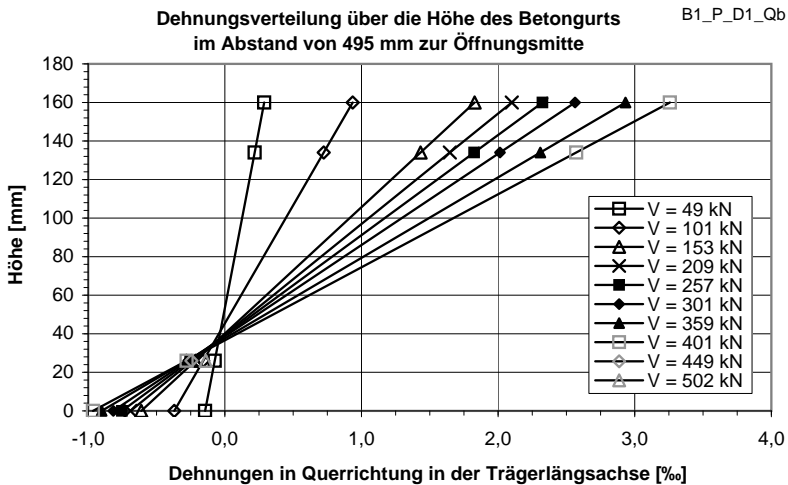
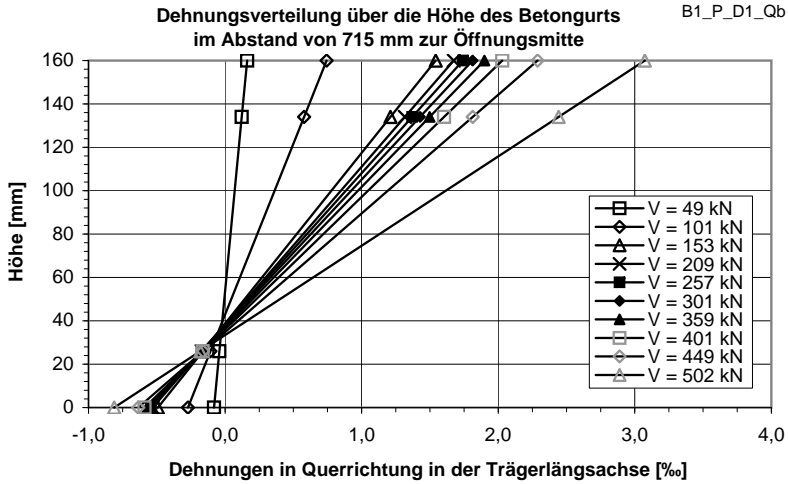


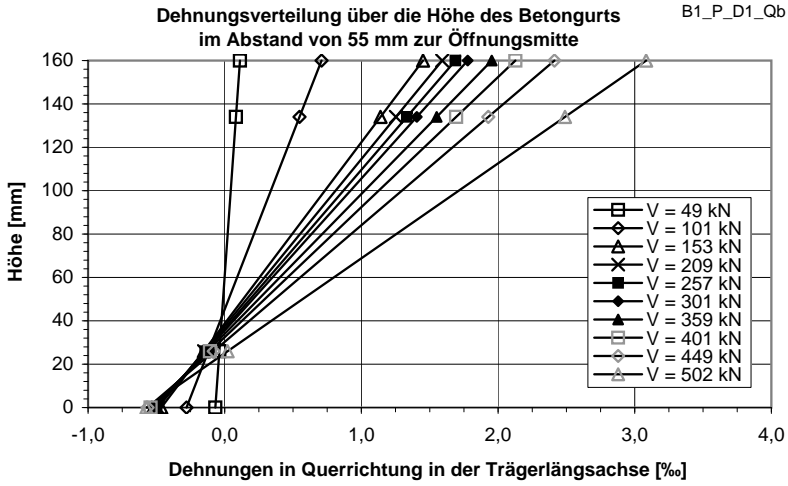
B.12.6. Querbewehrung



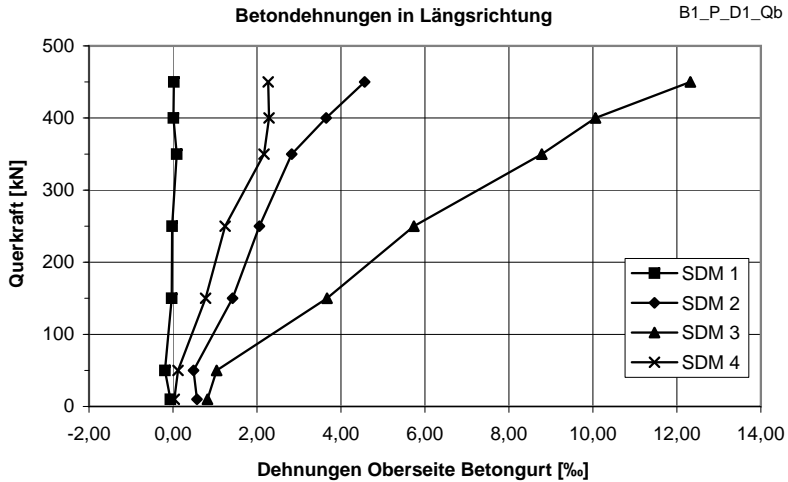


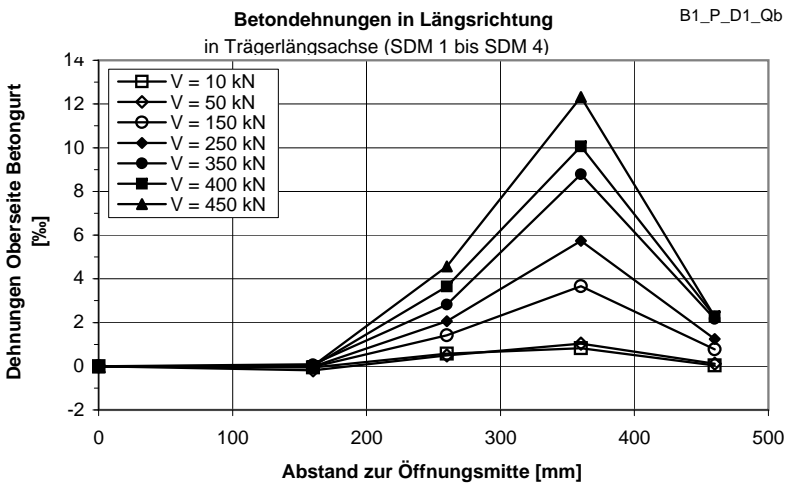
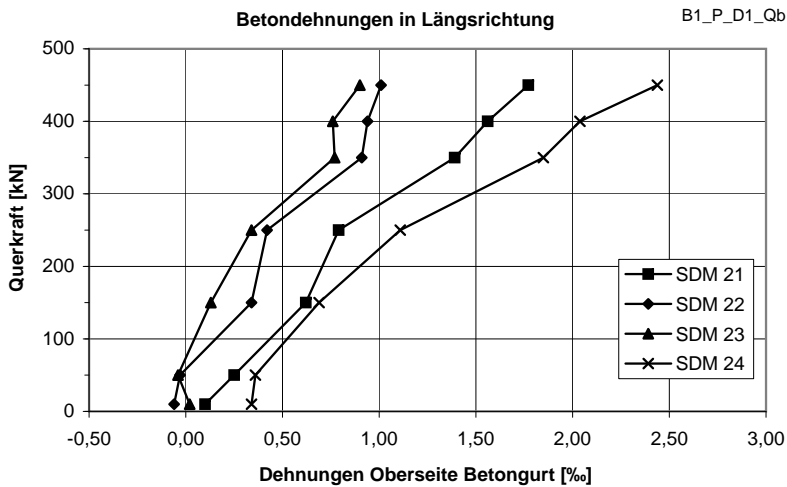
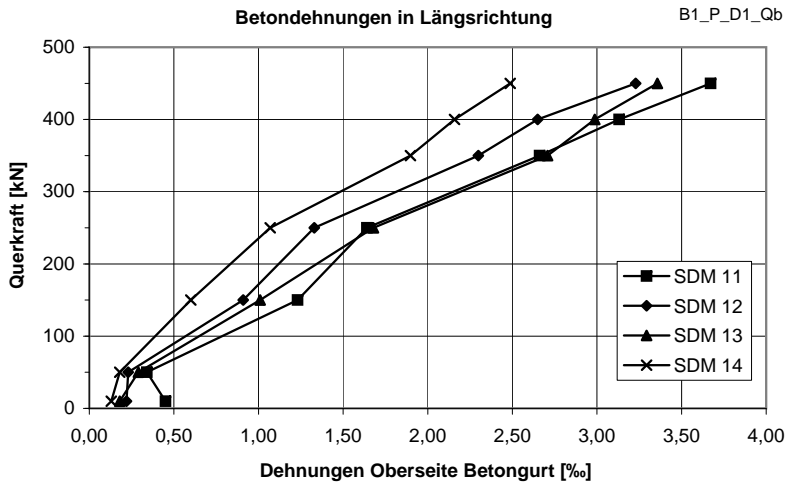


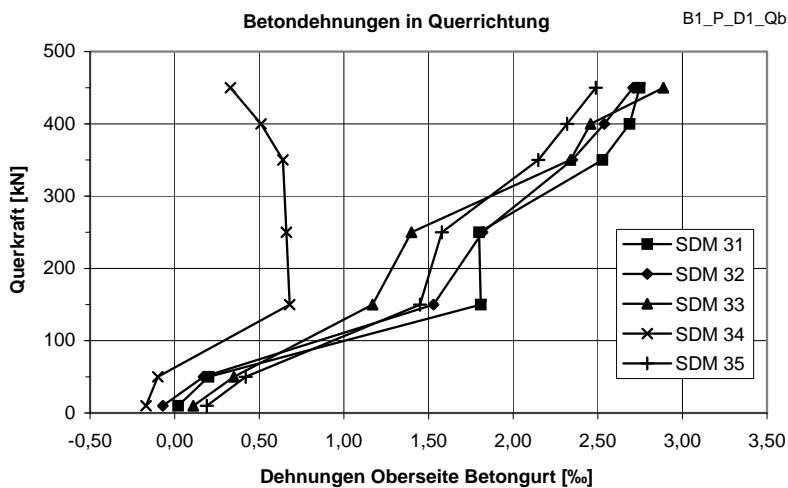
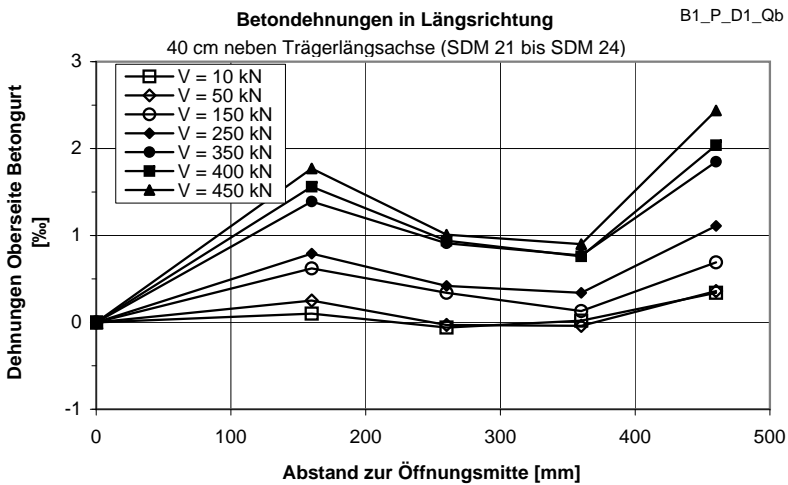
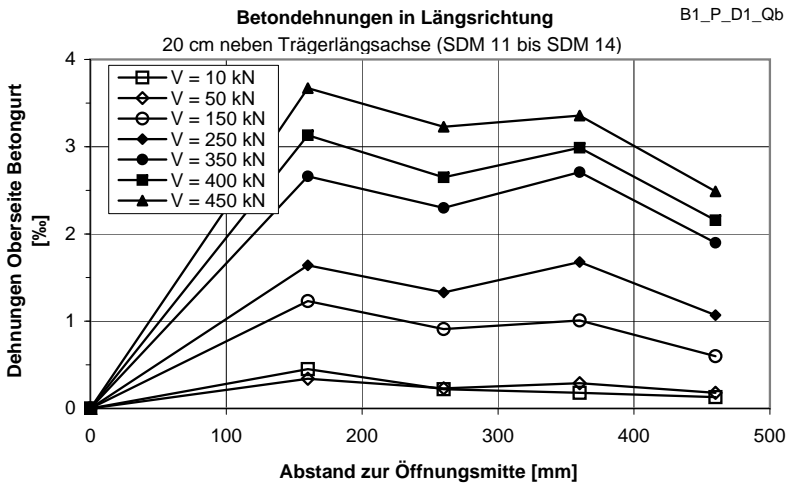


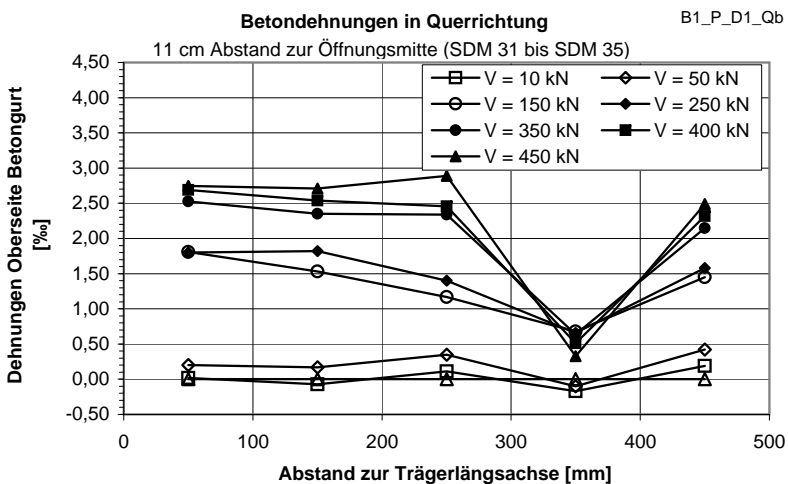
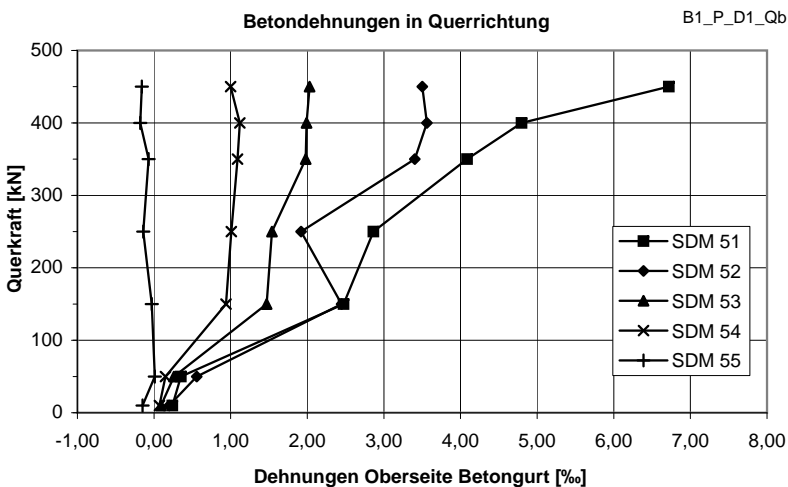
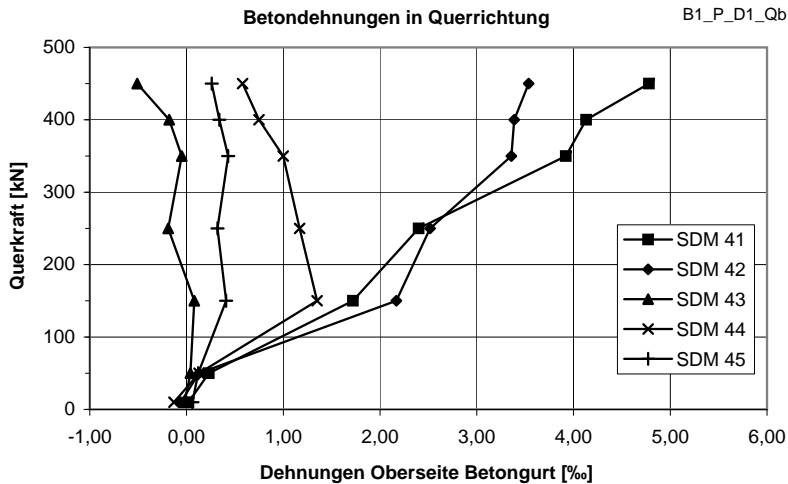


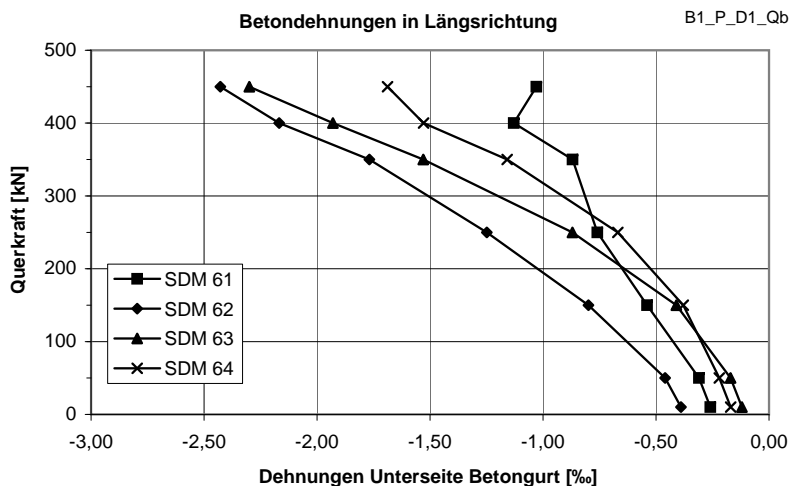
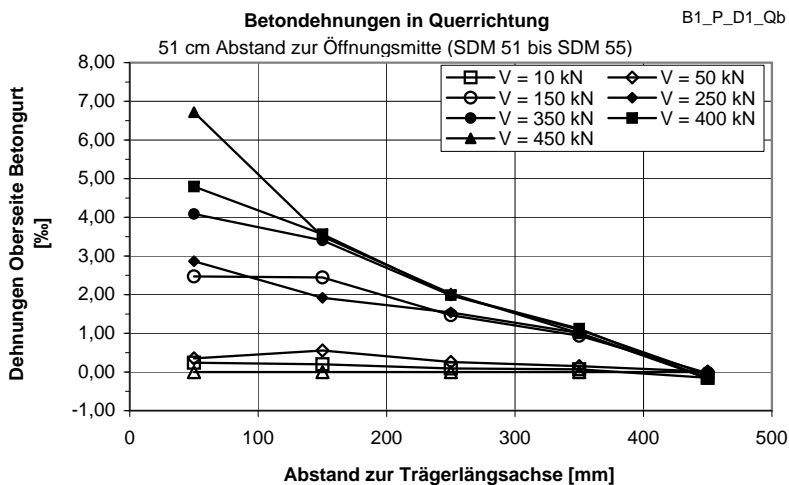
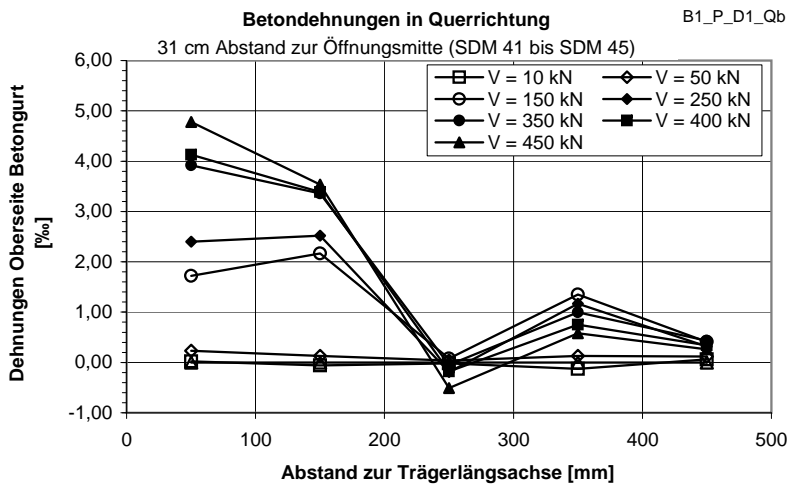
B.12.7. Betondehnungen

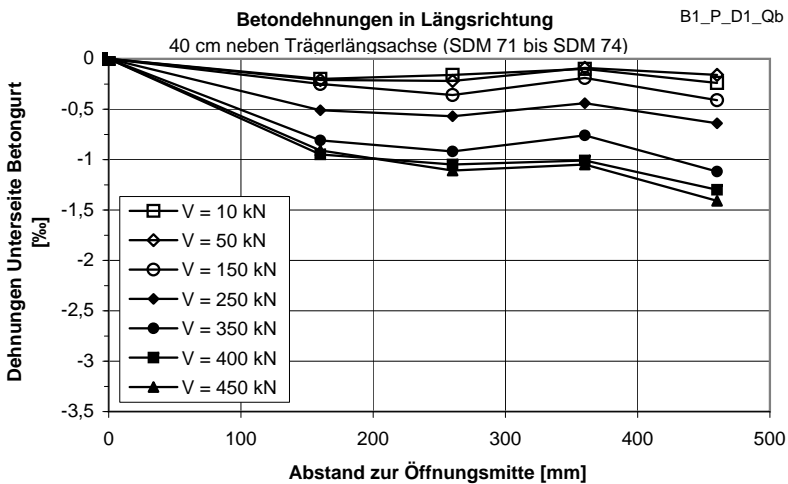
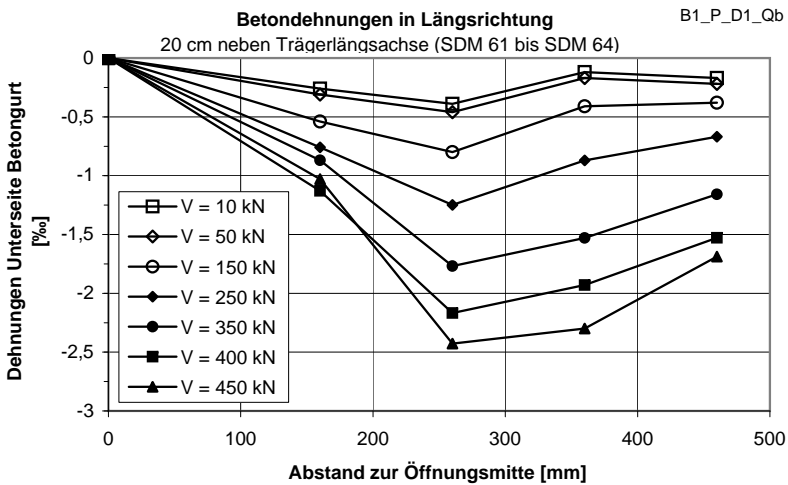
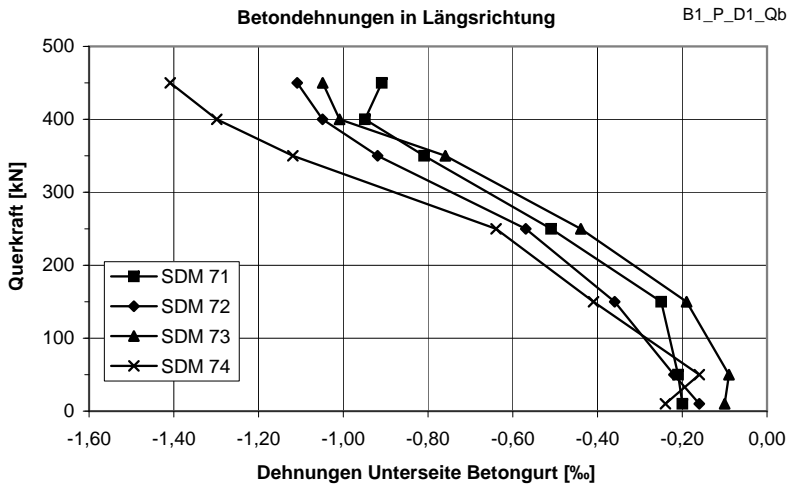


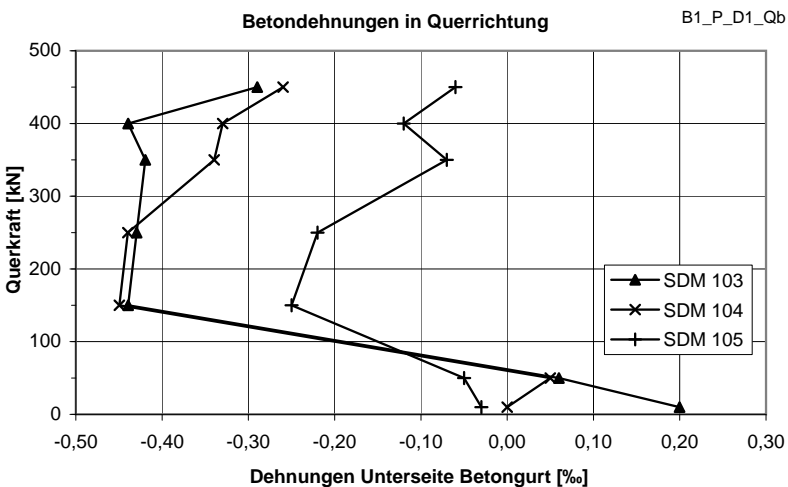
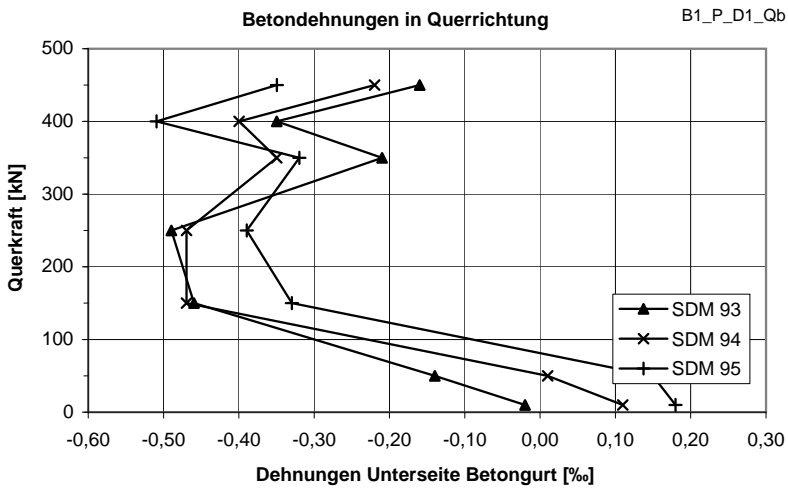
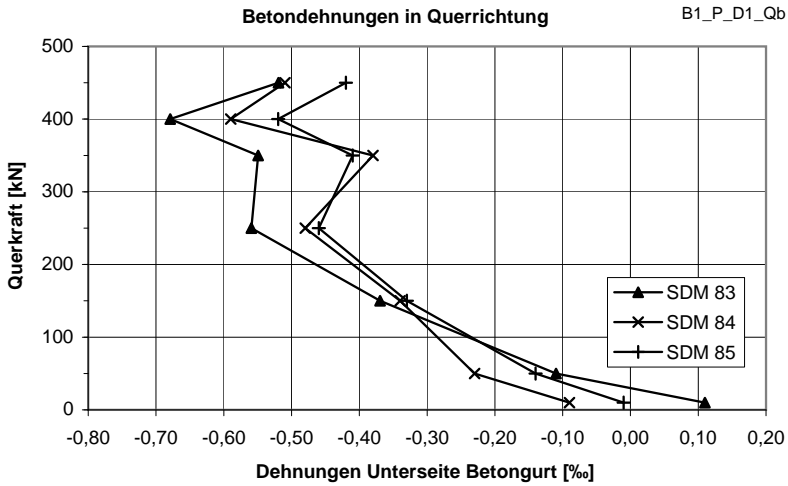


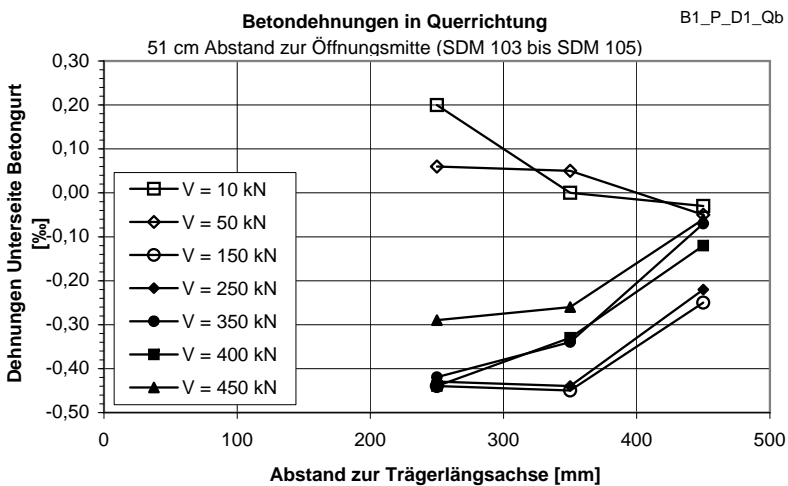
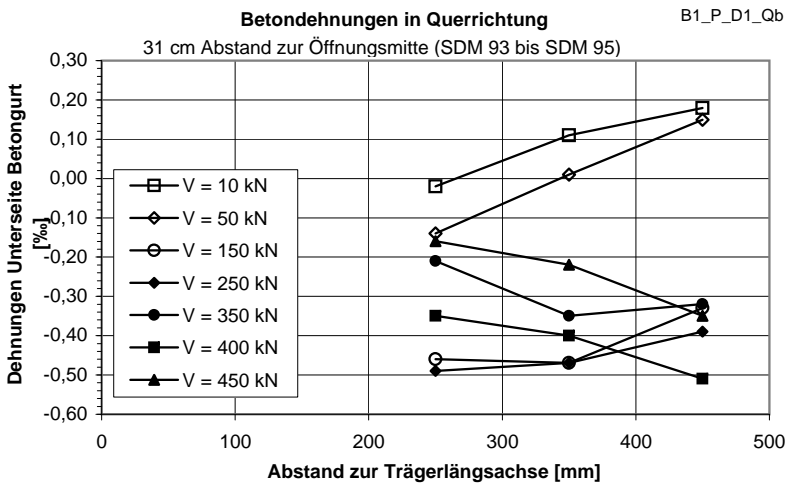
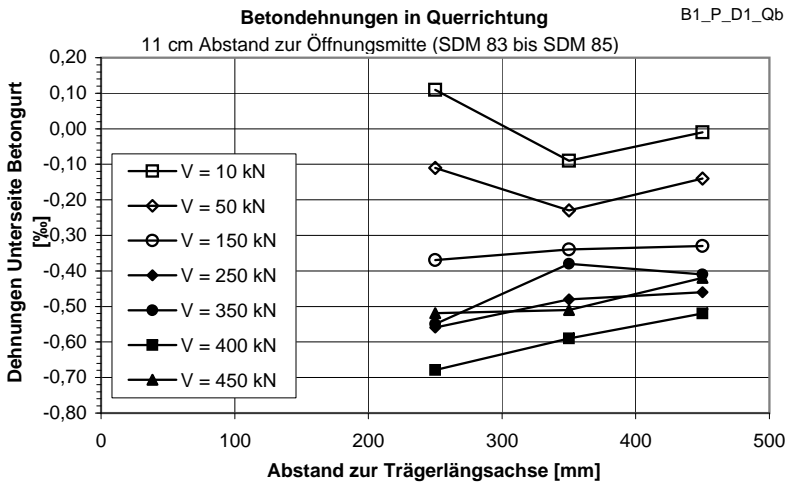






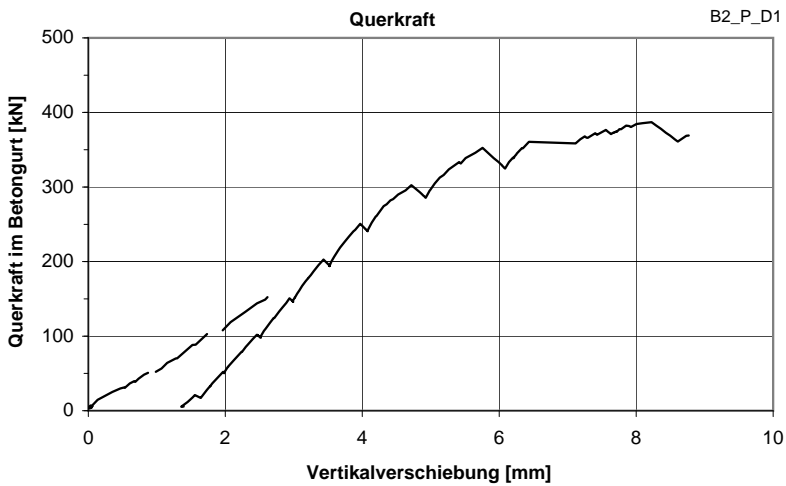
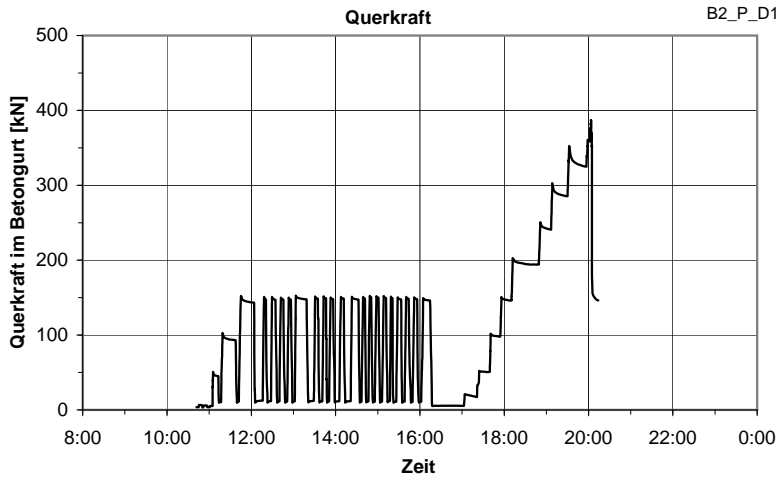


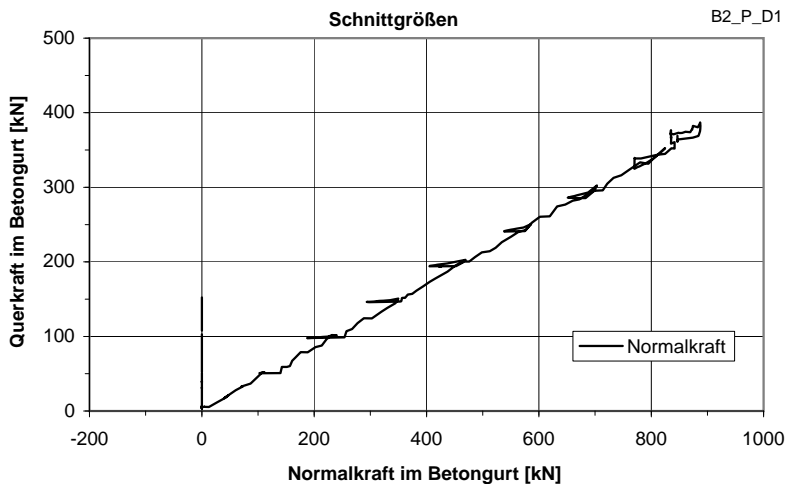
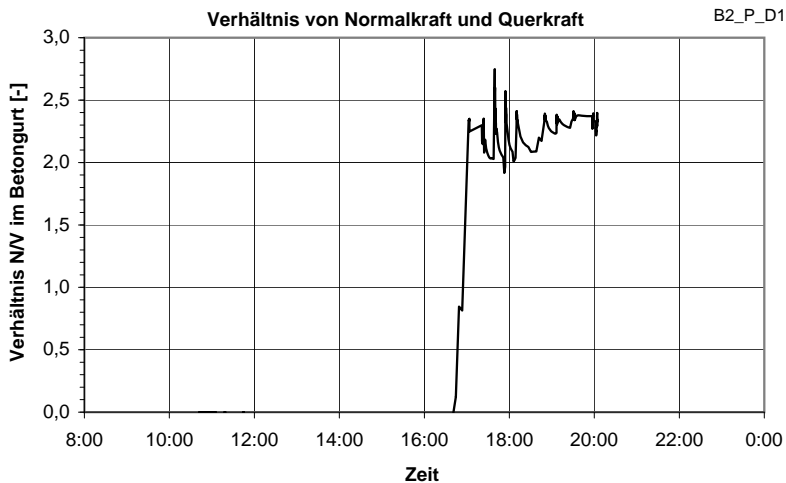
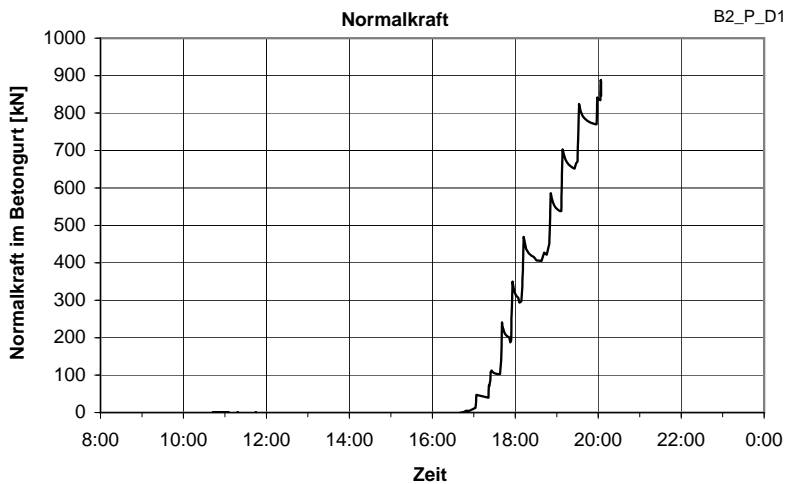


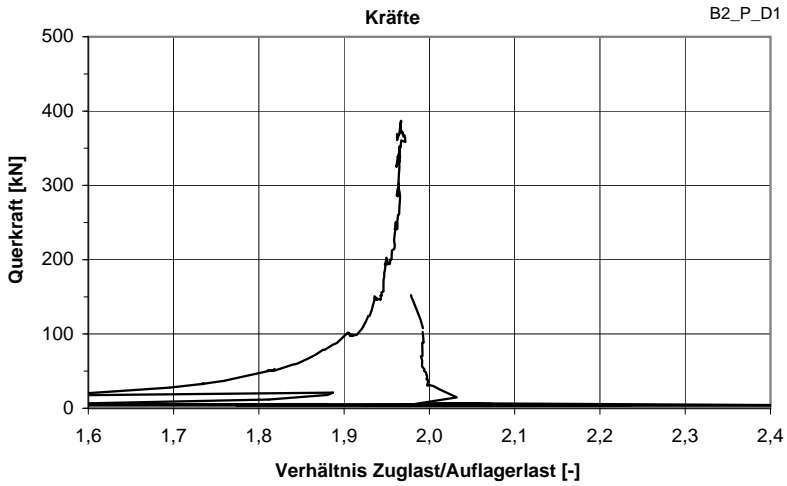
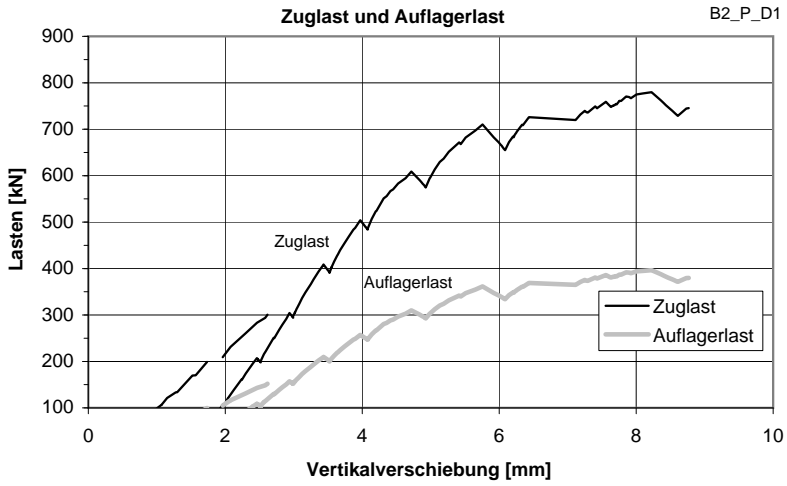


B.13. Versuch B2_P_D1

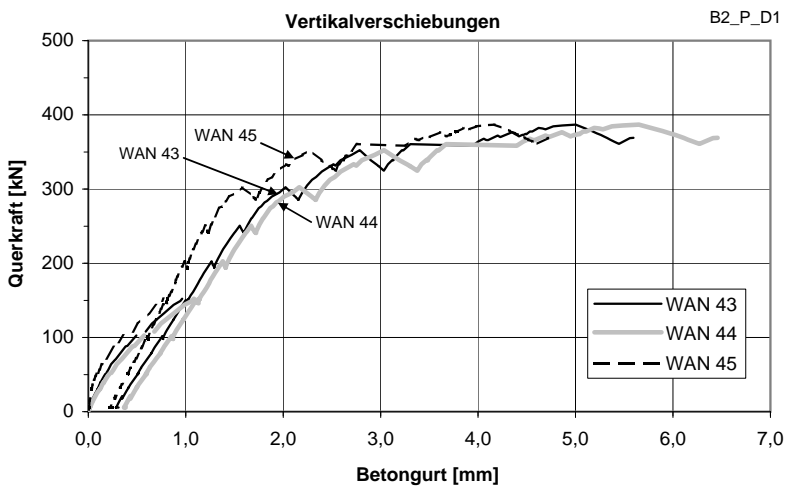
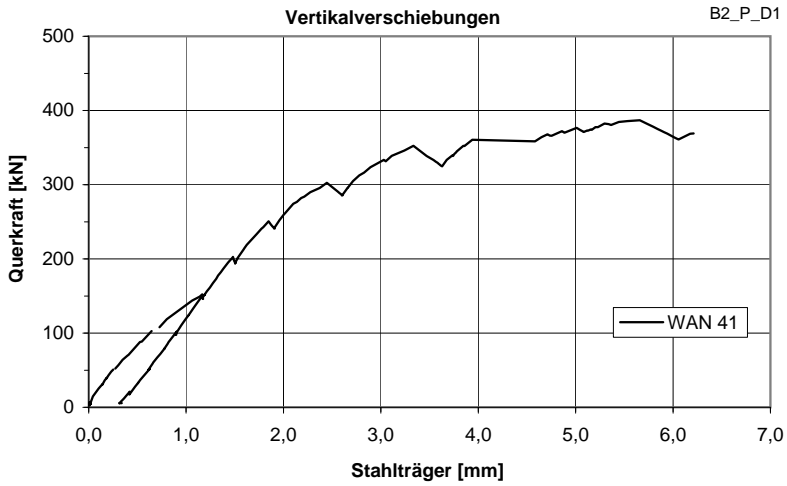
B.13.1. Kräfte

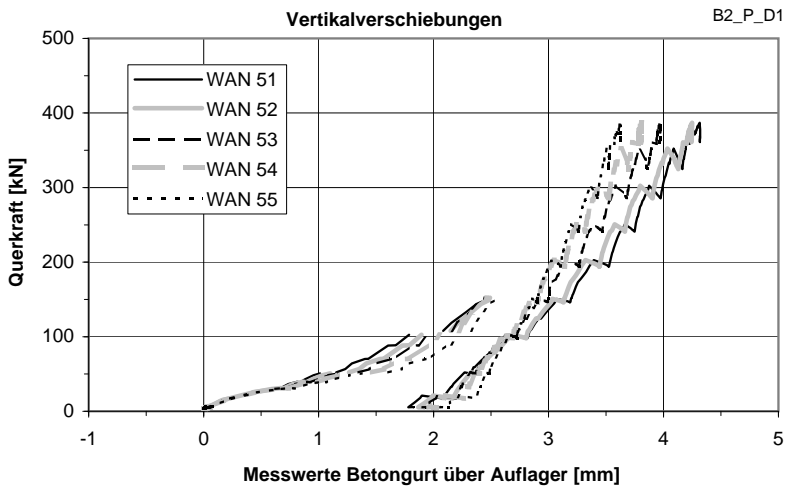
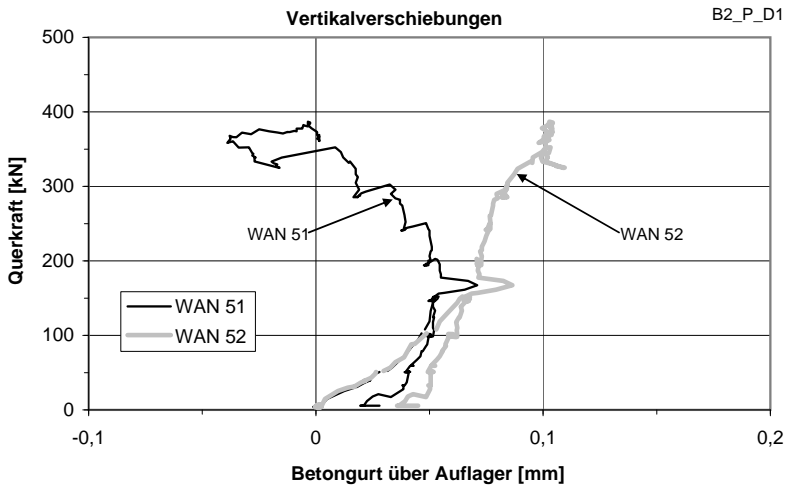
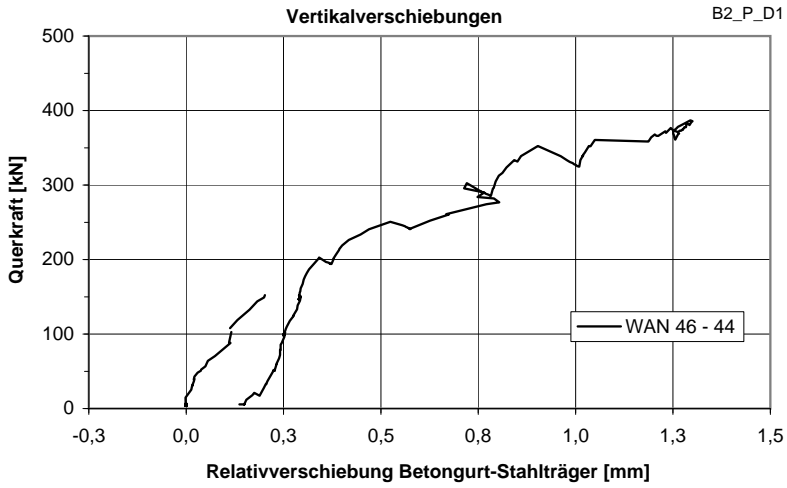




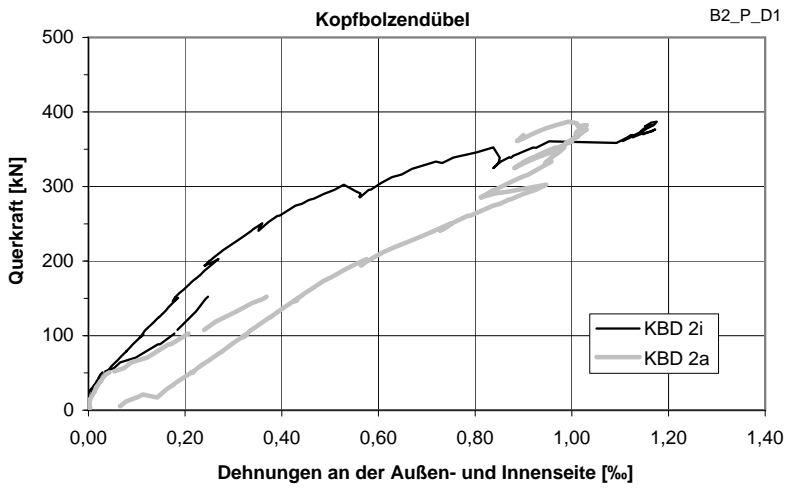
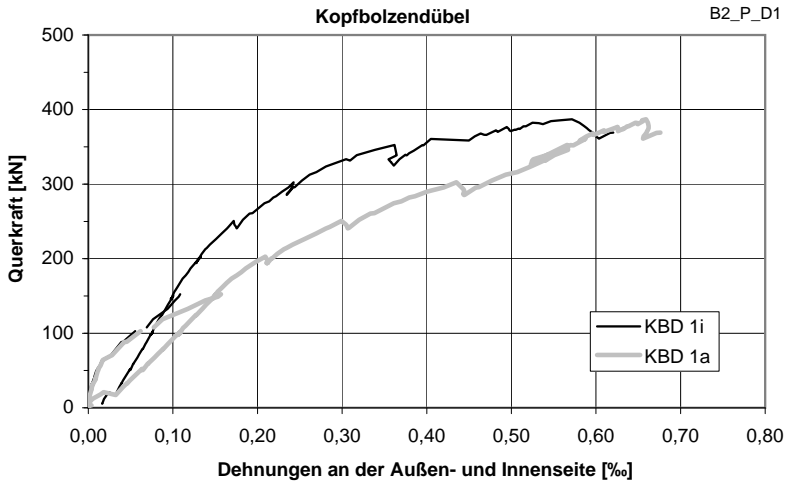


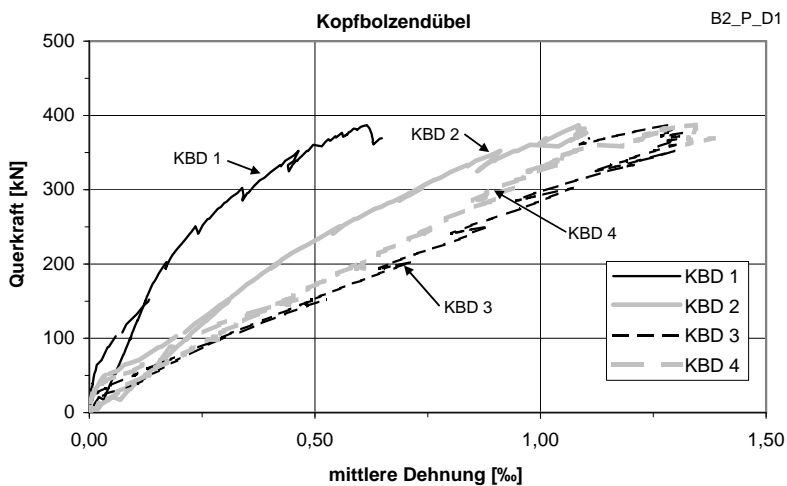
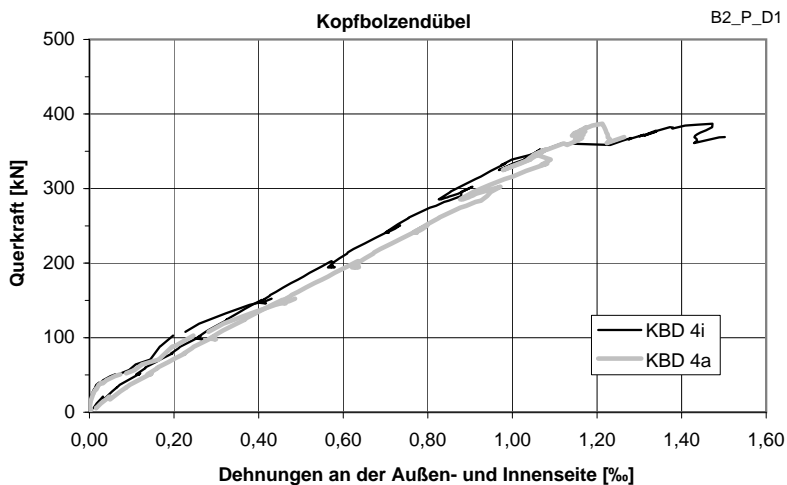
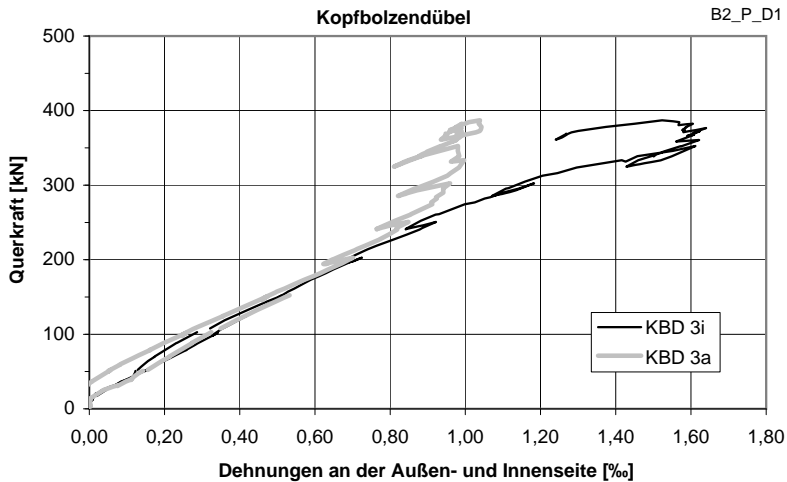
B.13.2. Verformungen

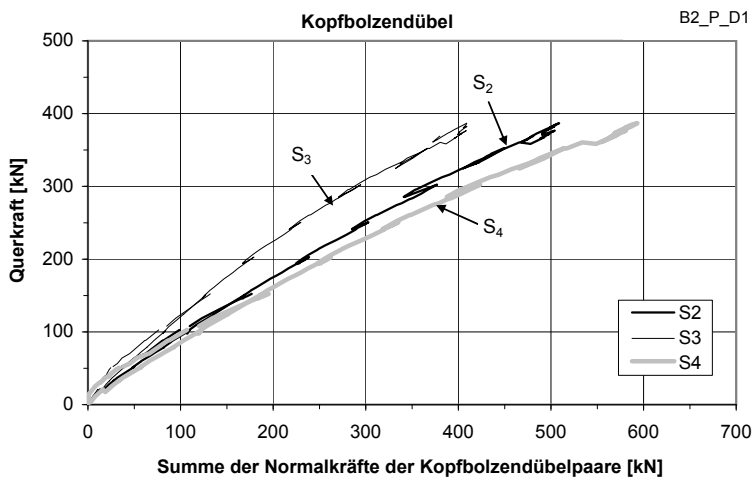
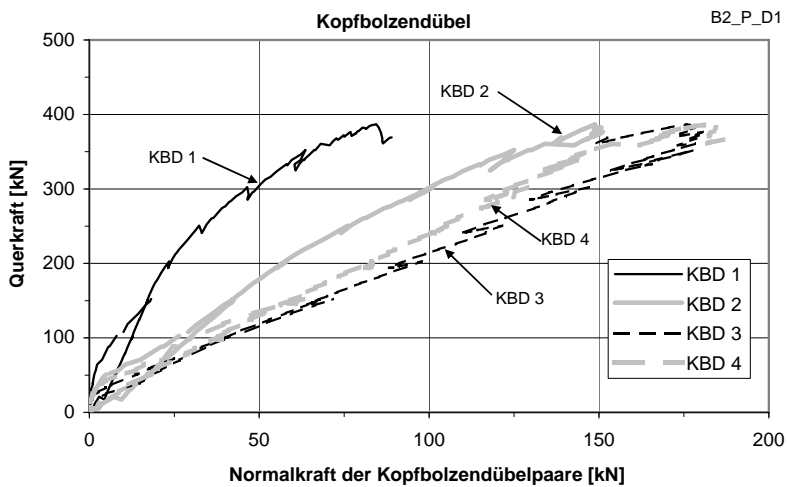
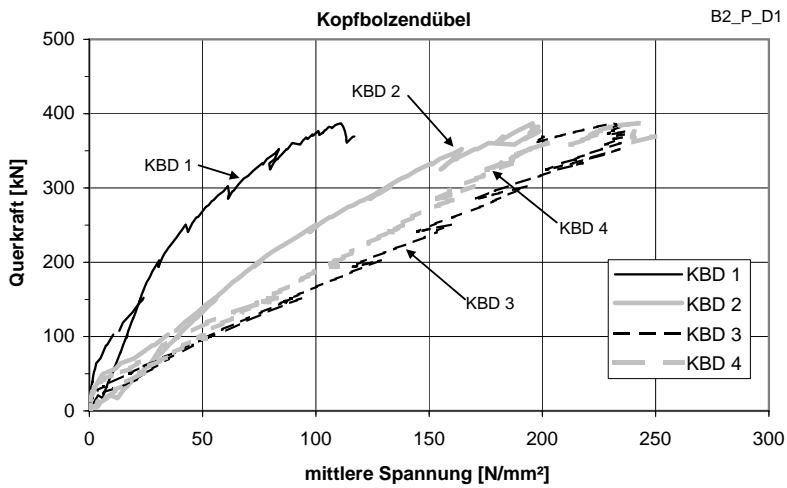




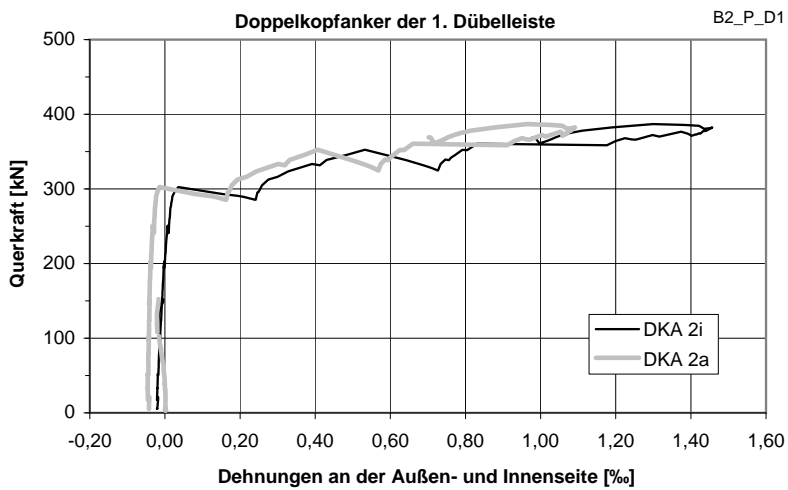
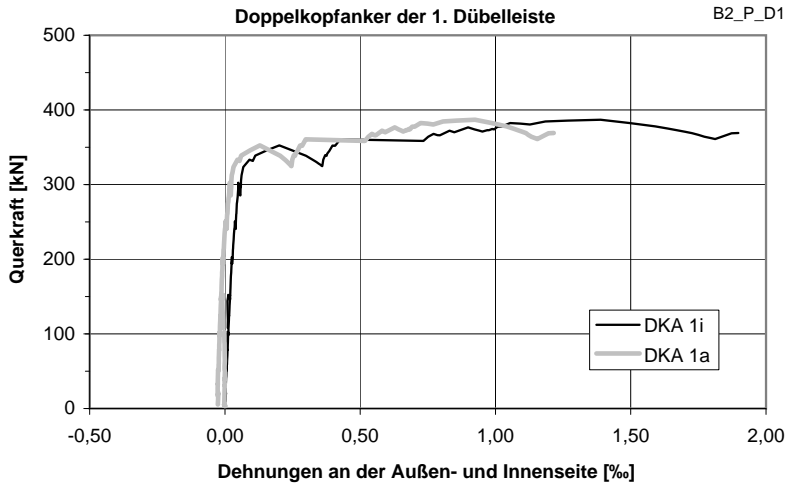
B.13.3. Kopfbolzendübel

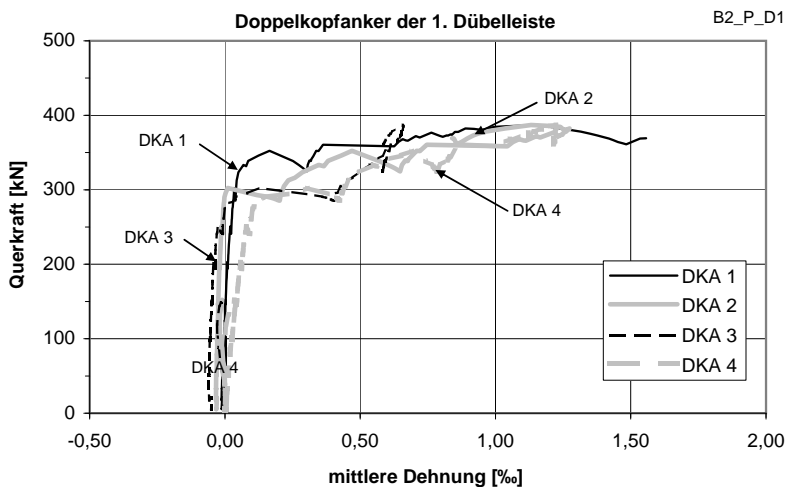
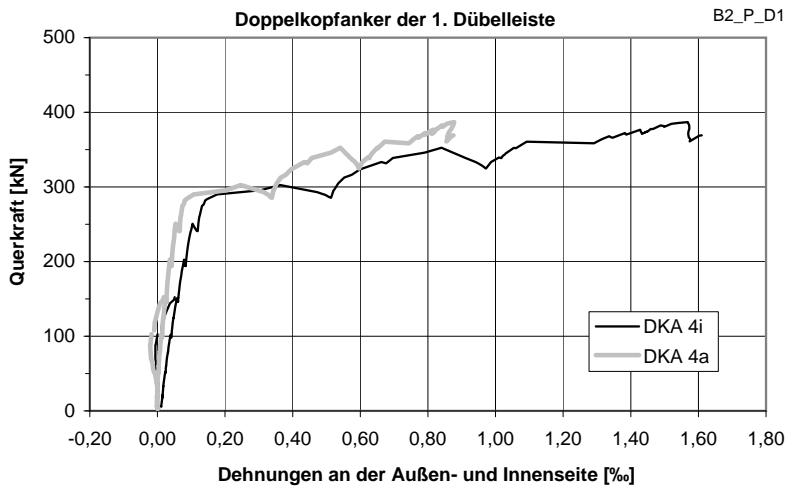
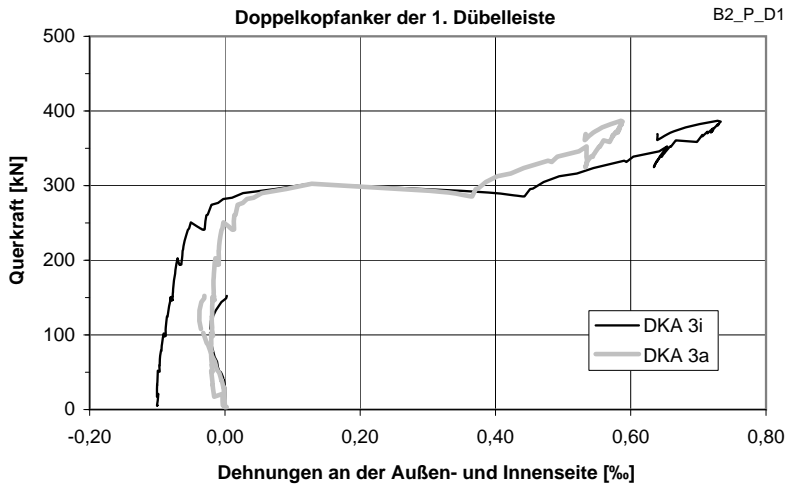


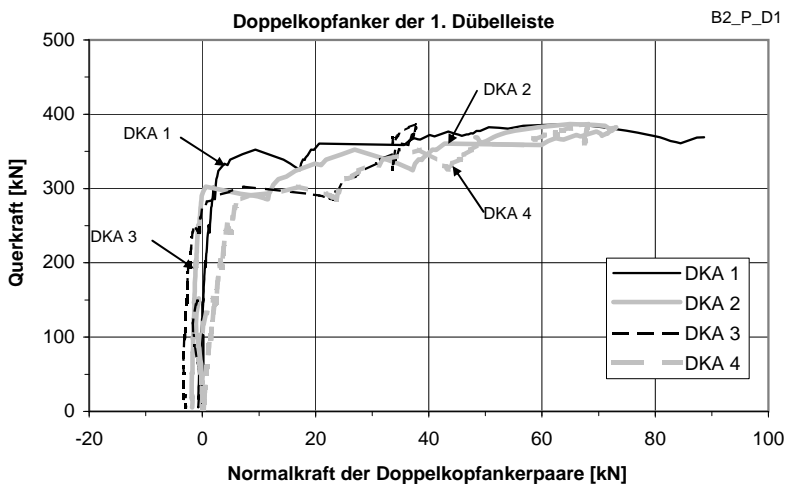
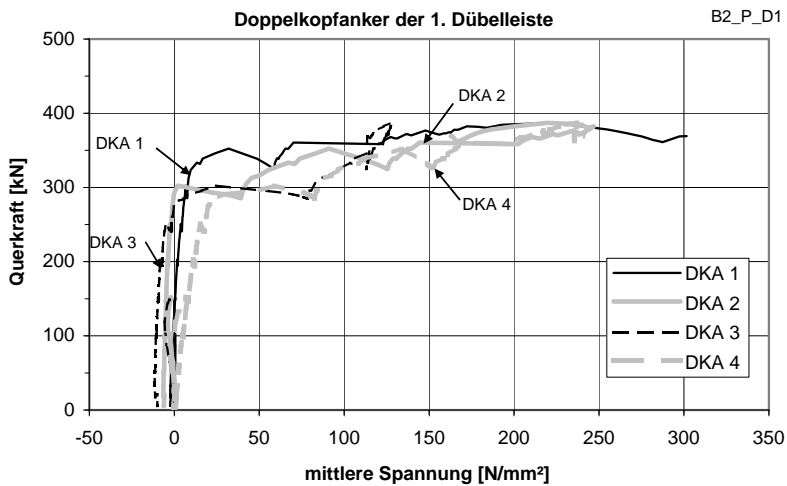




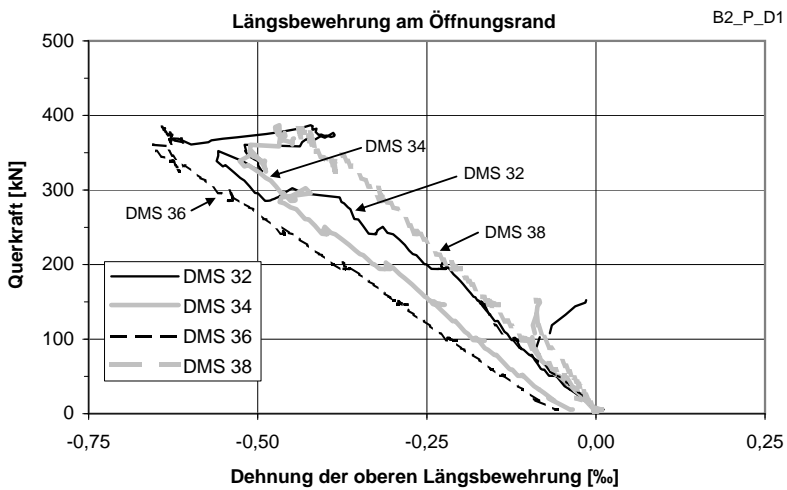
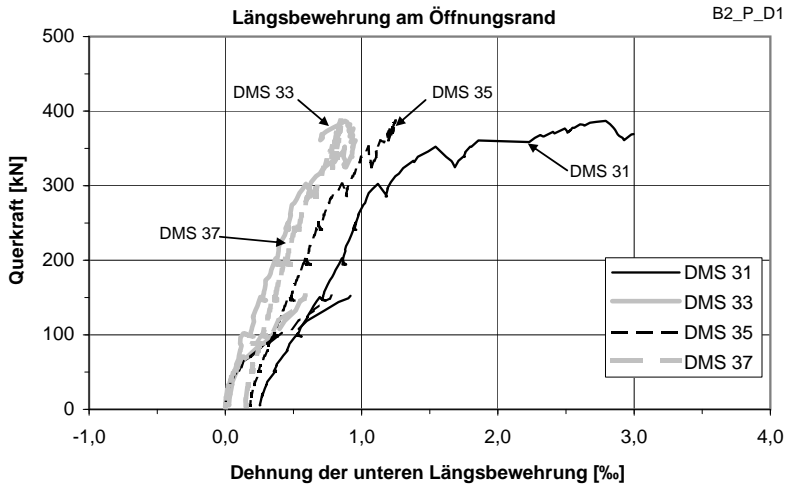
B.13.4. Doppelkopfkanker

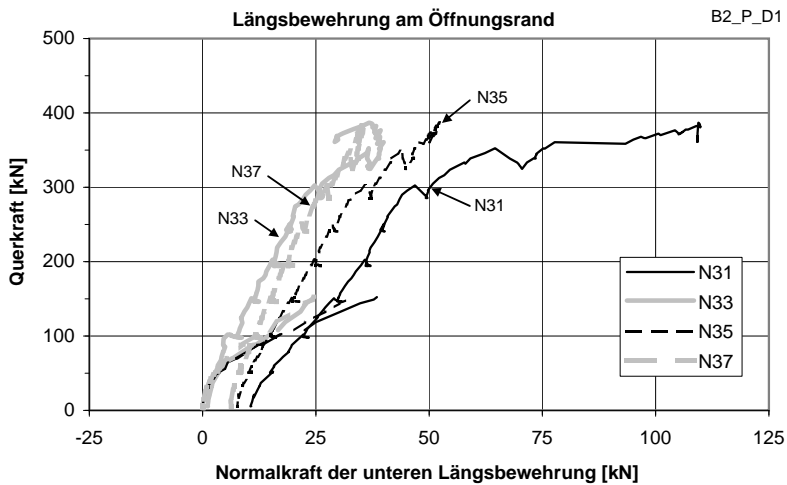
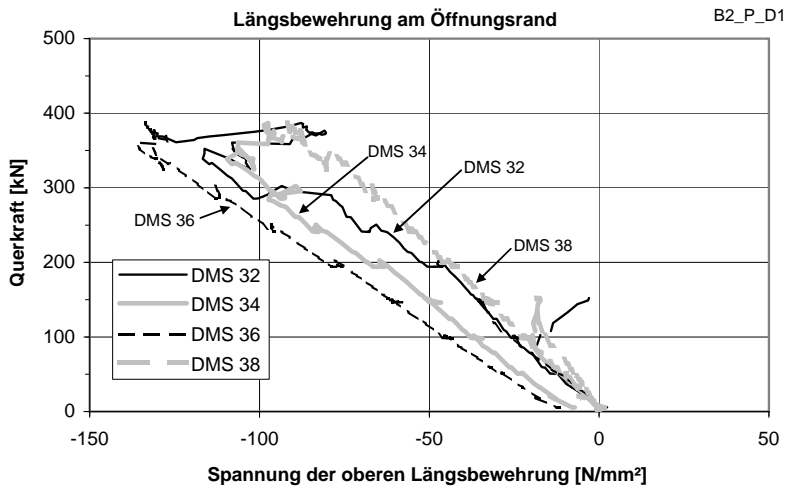
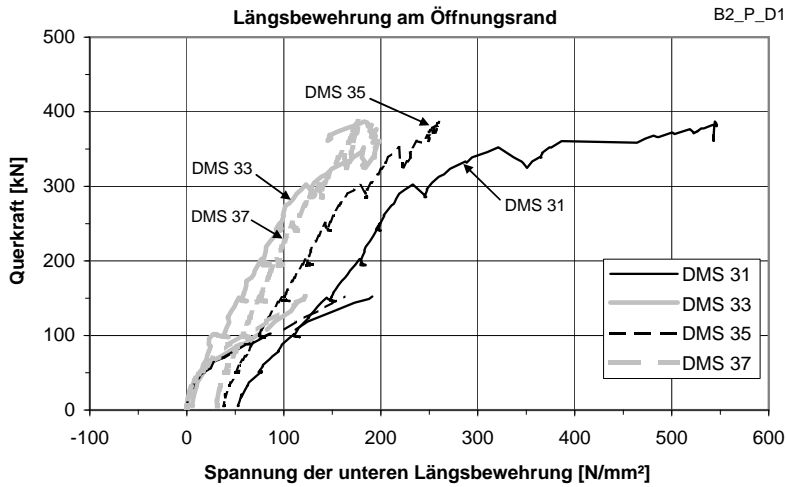


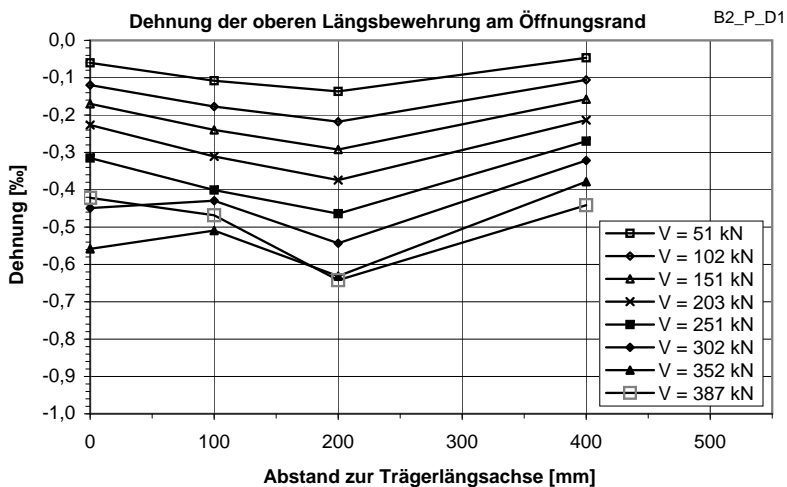
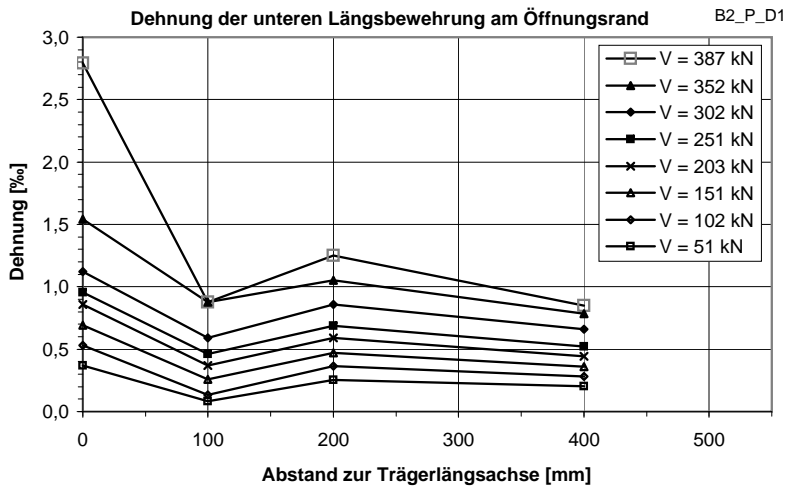
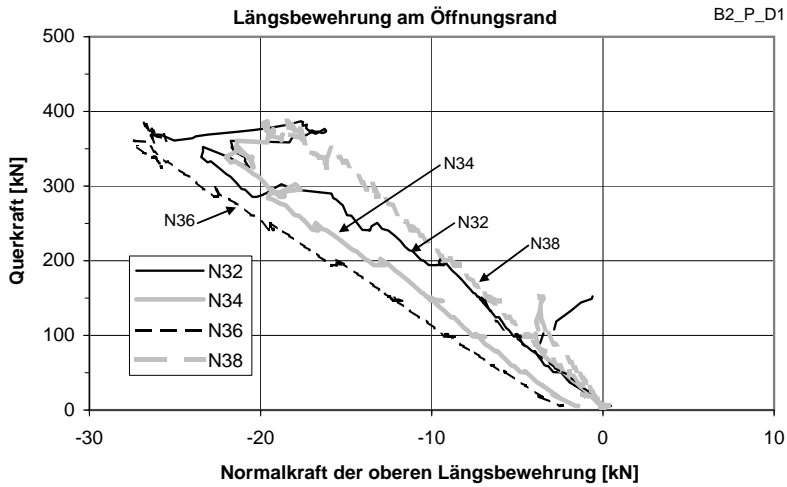


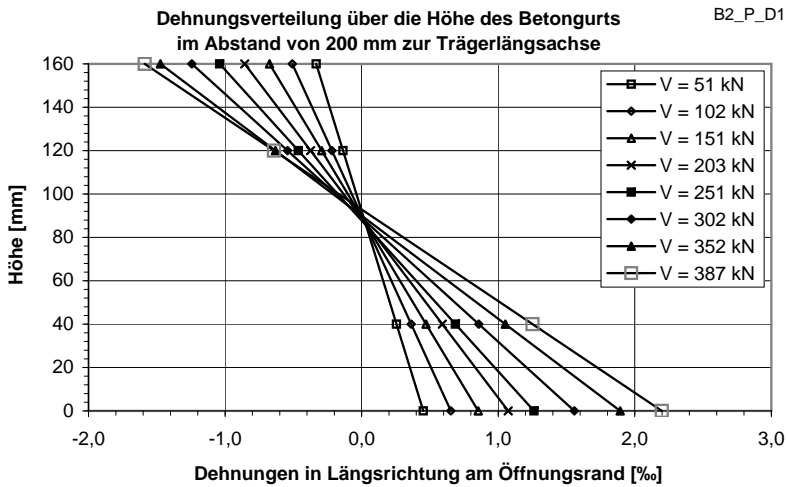
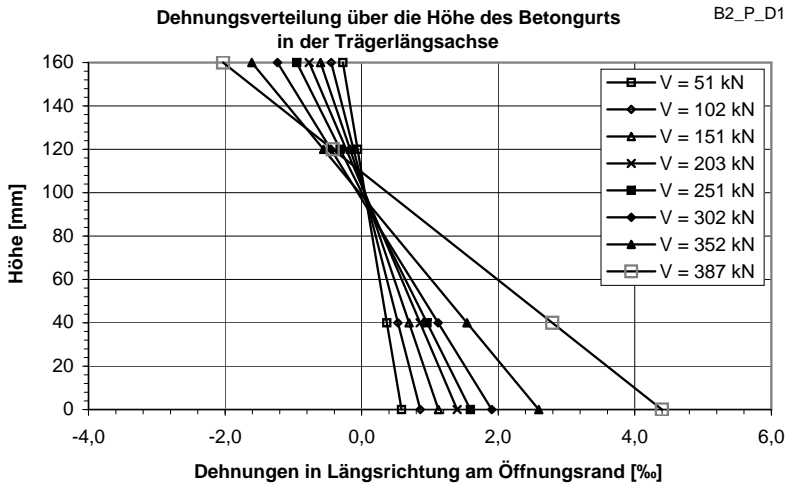


B.13.5. Längsbewehrung

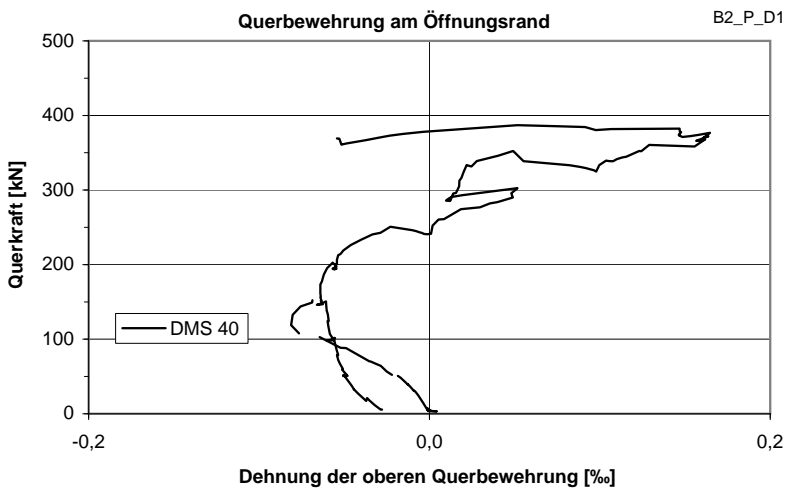
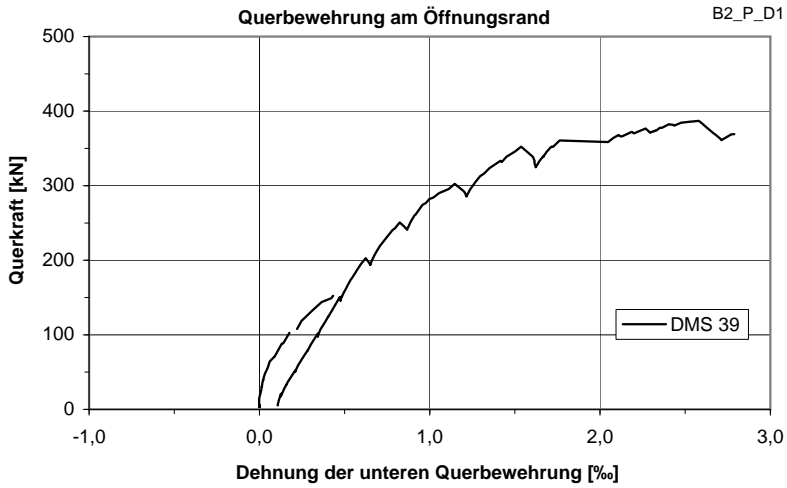


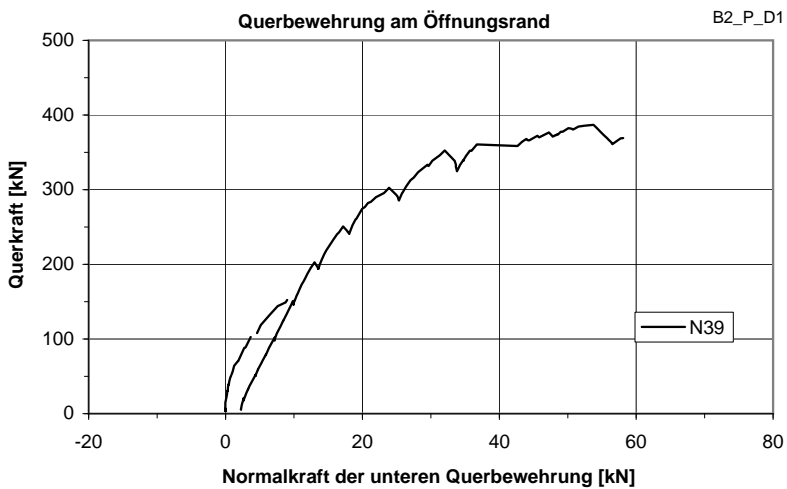
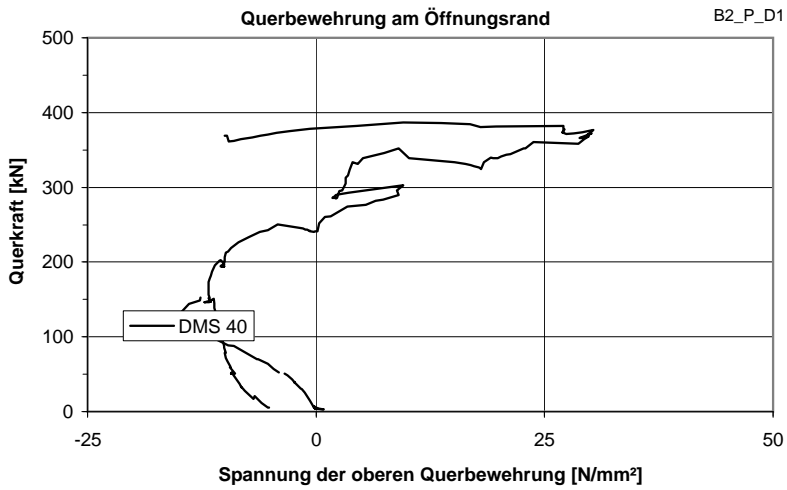
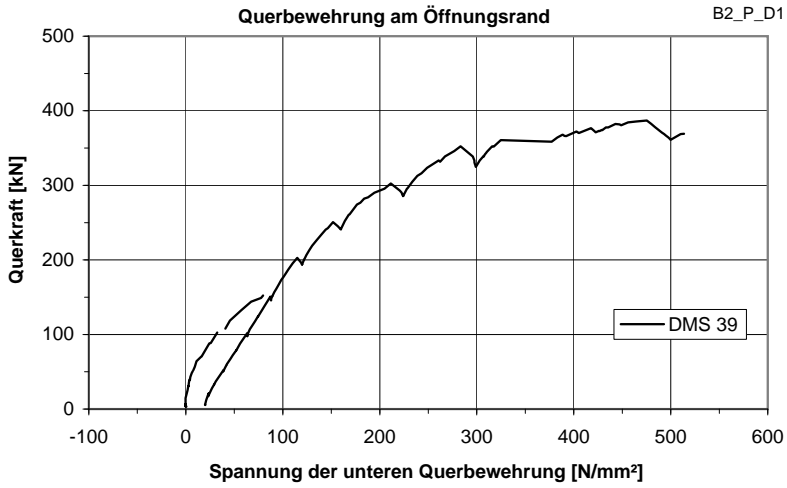


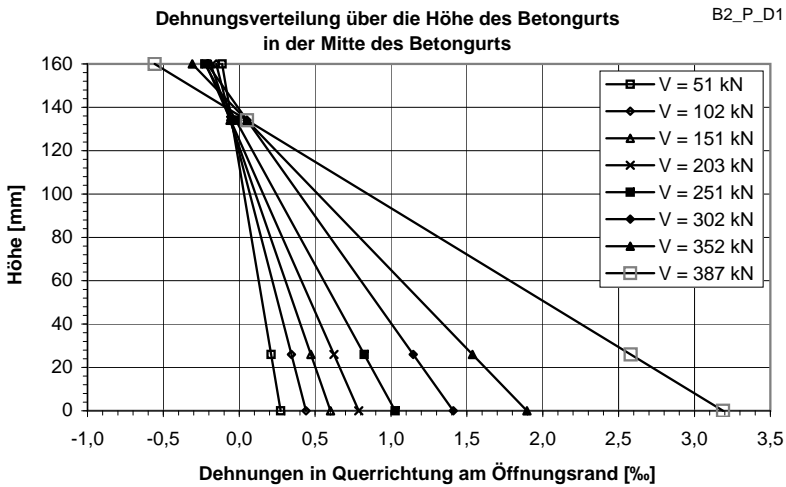
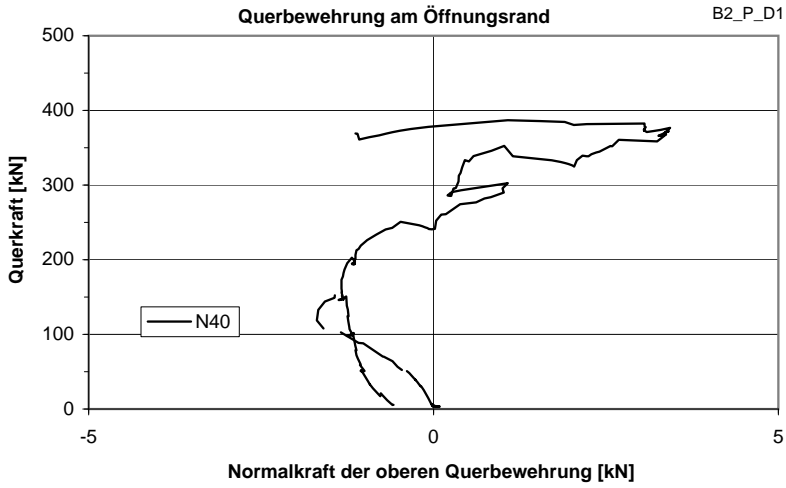




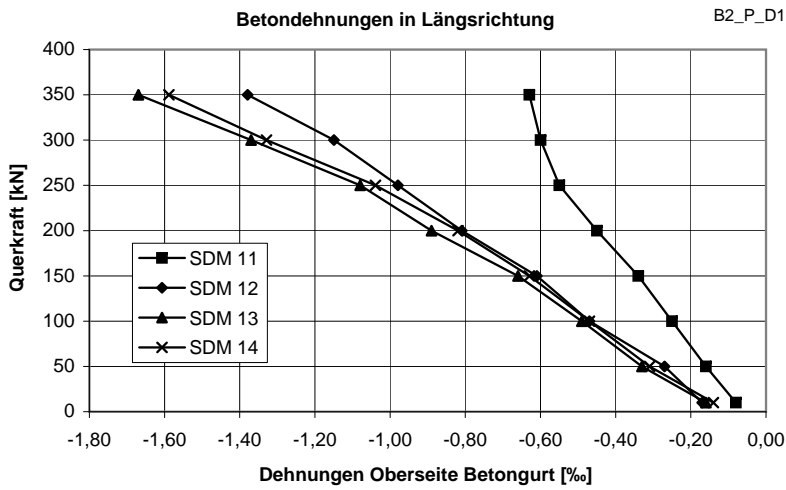
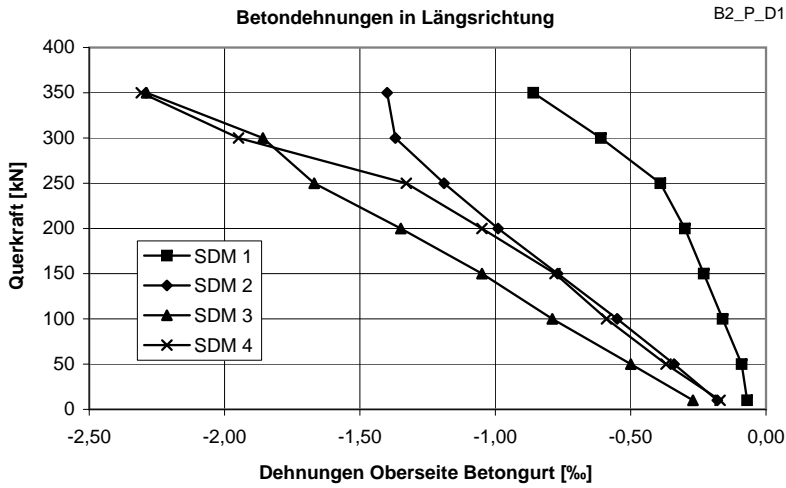
B.13.6. Querbewehrung

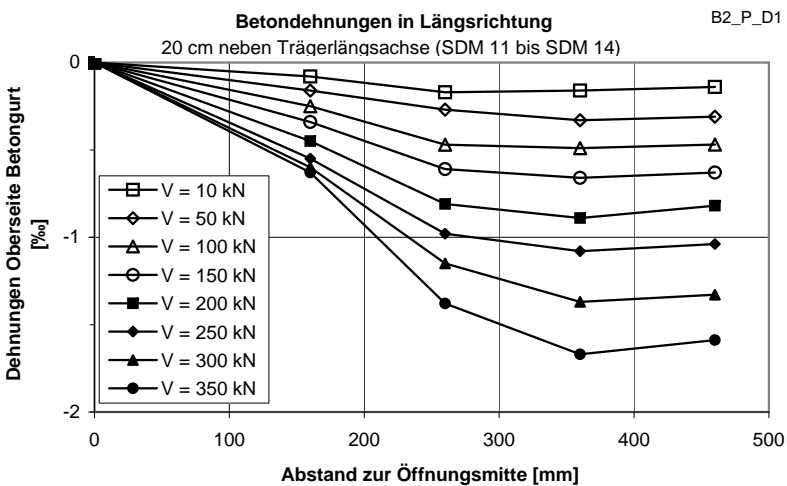
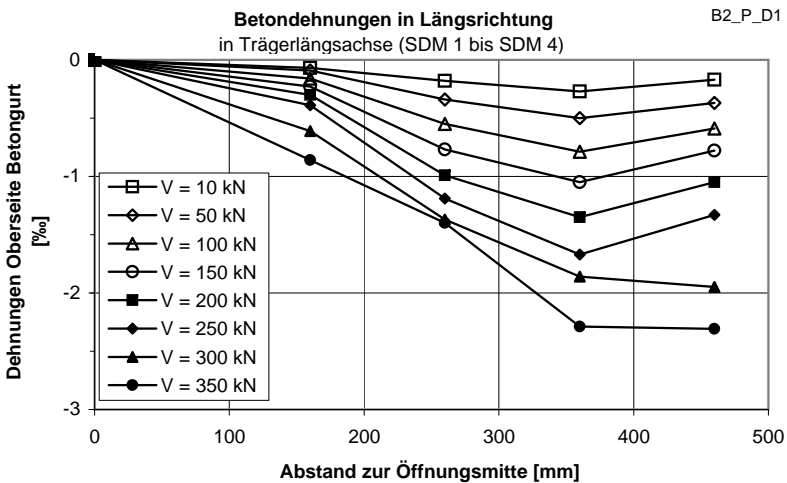
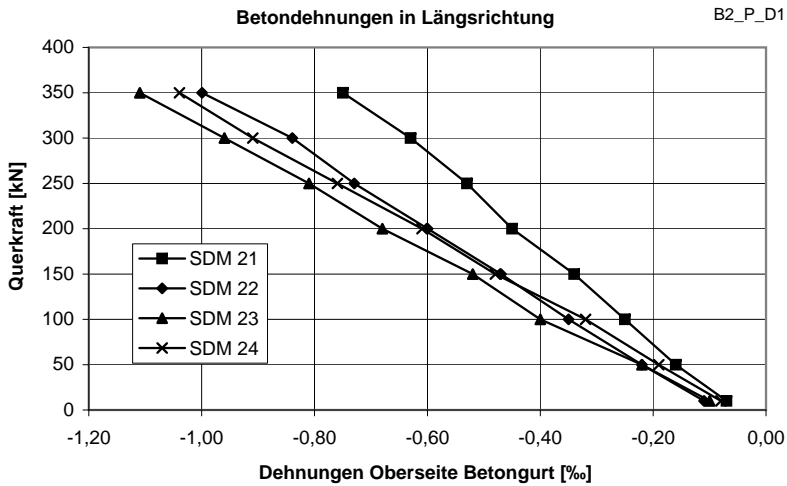


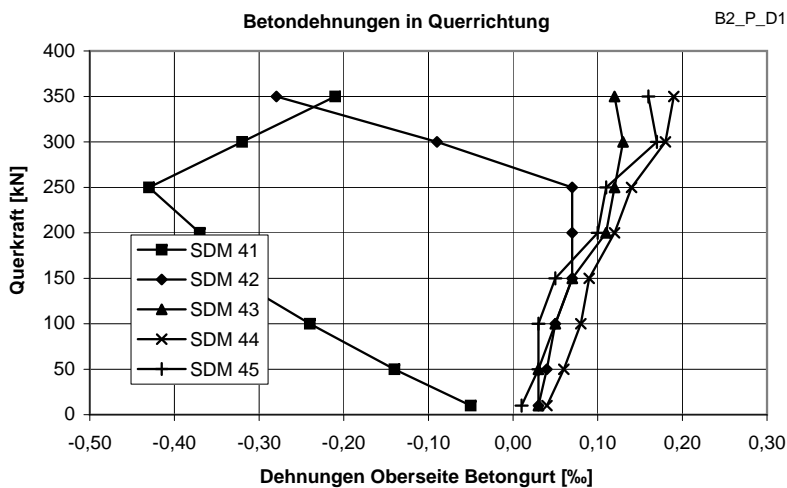
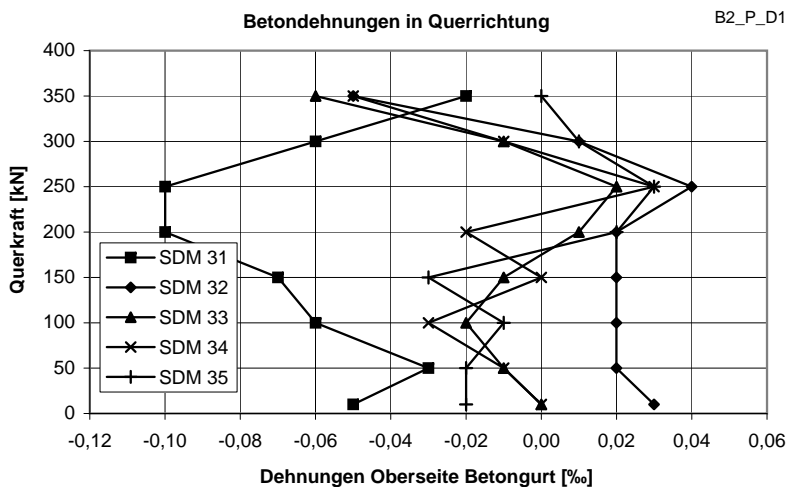
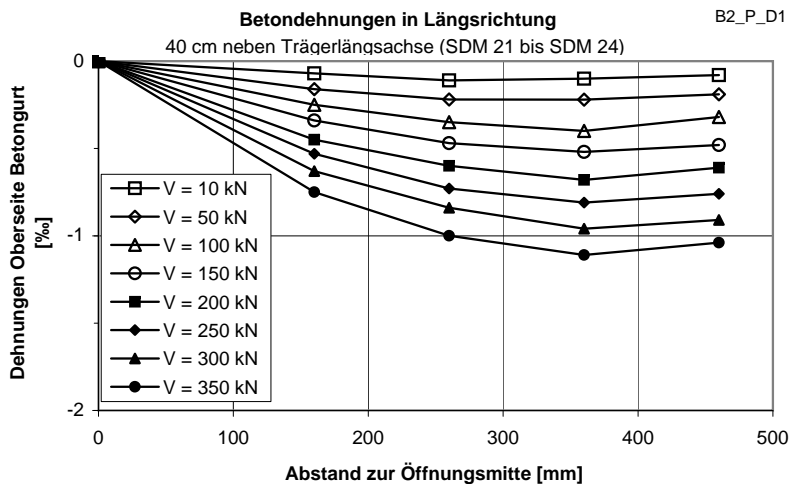


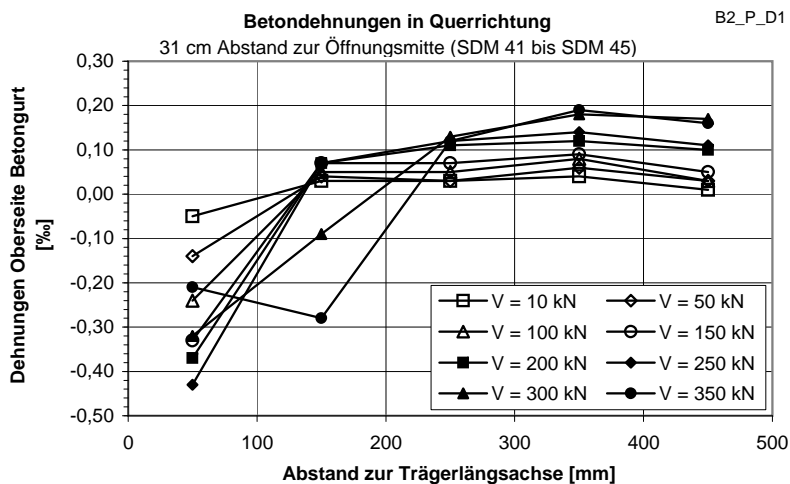
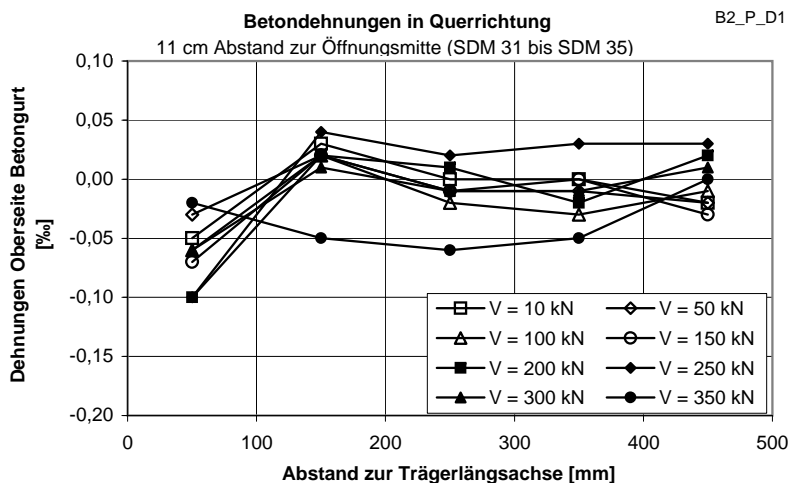
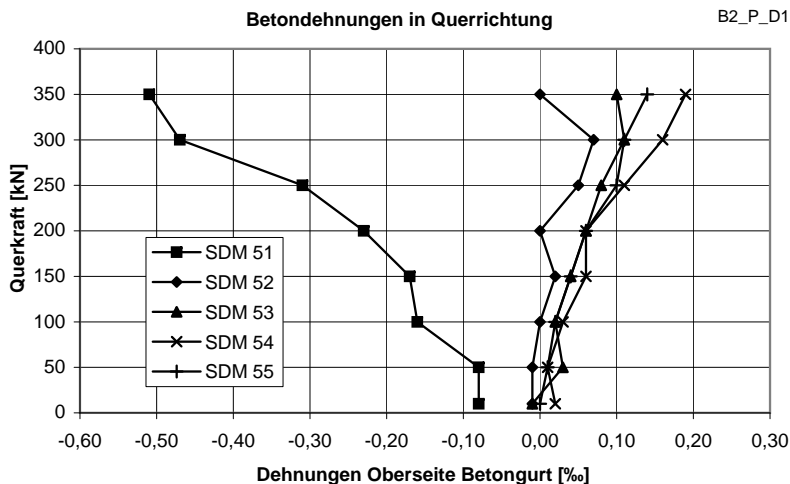


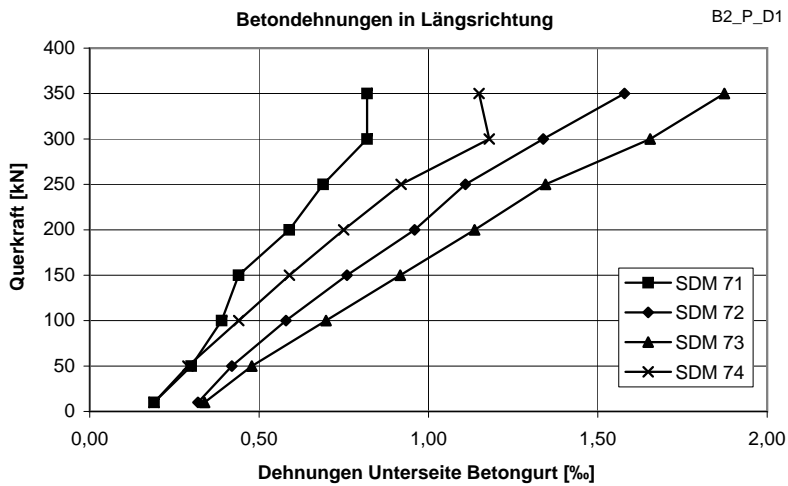
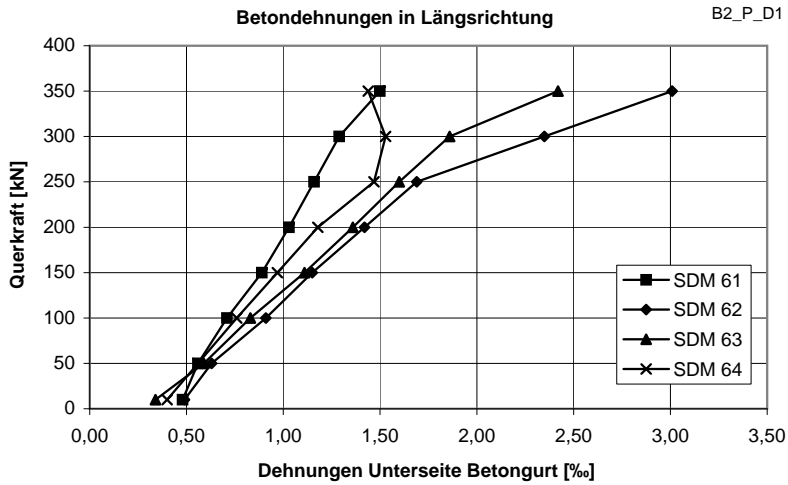
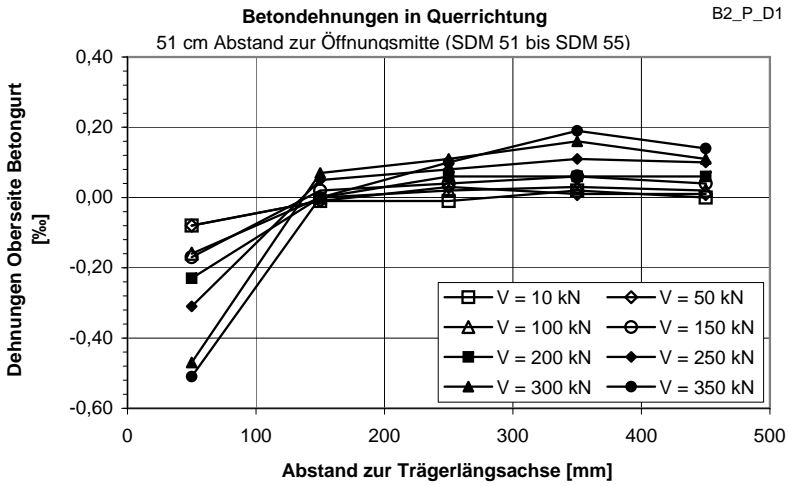
B.13.7. Betondehnungen

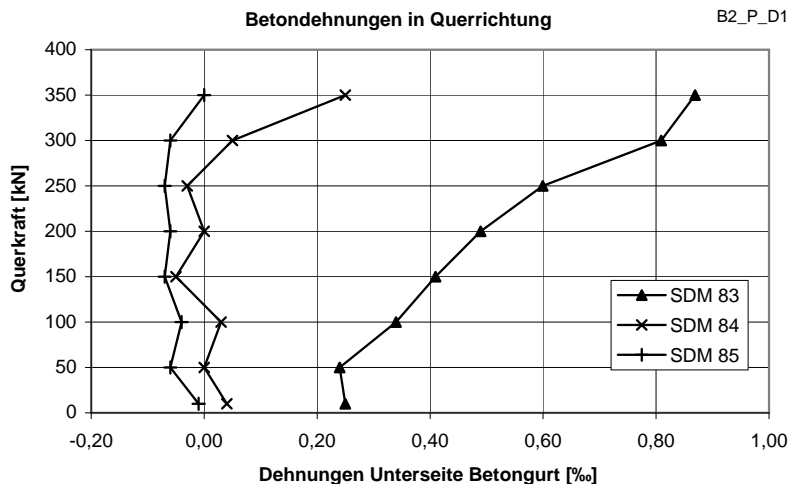
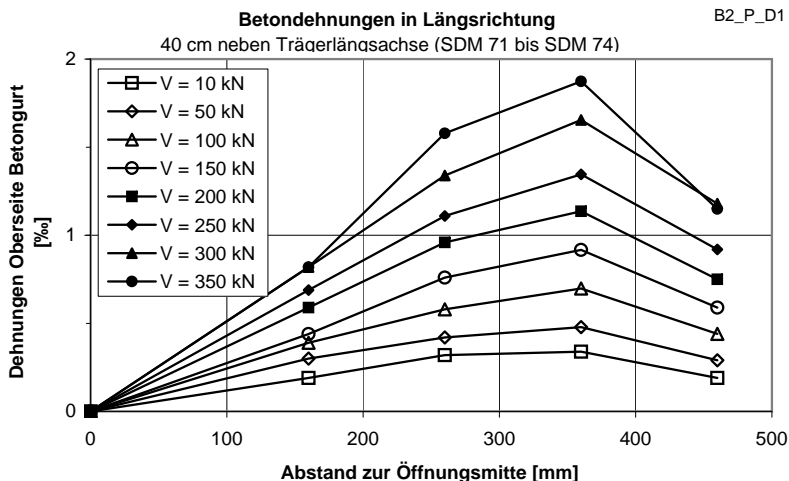
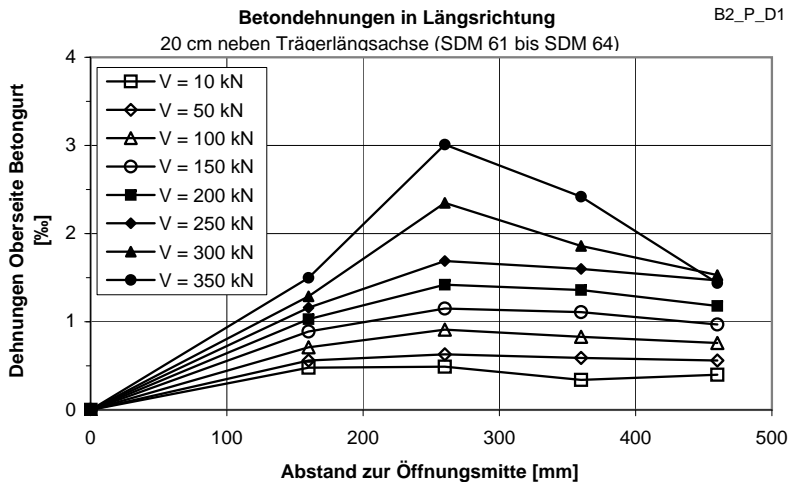


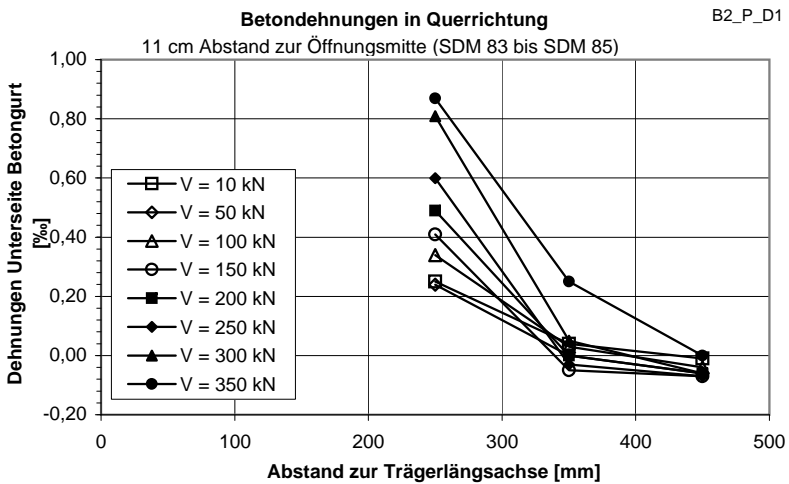
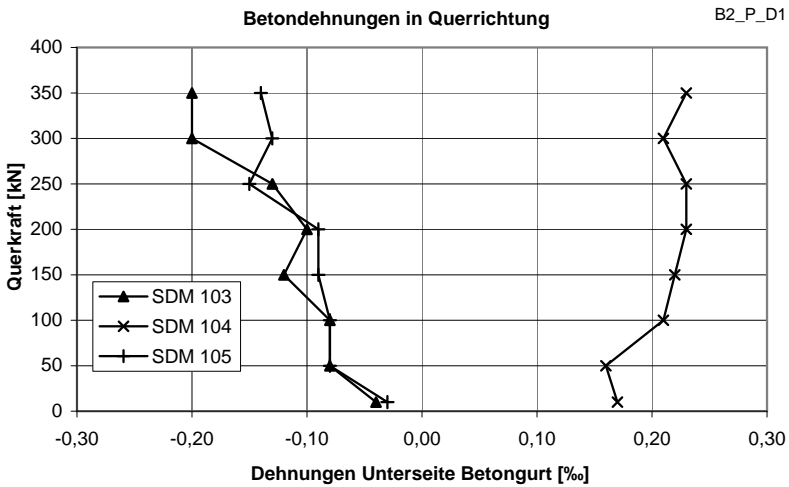
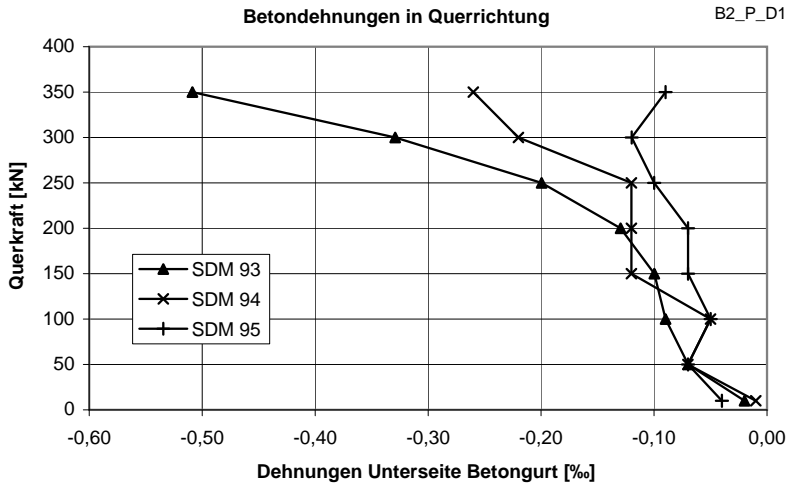


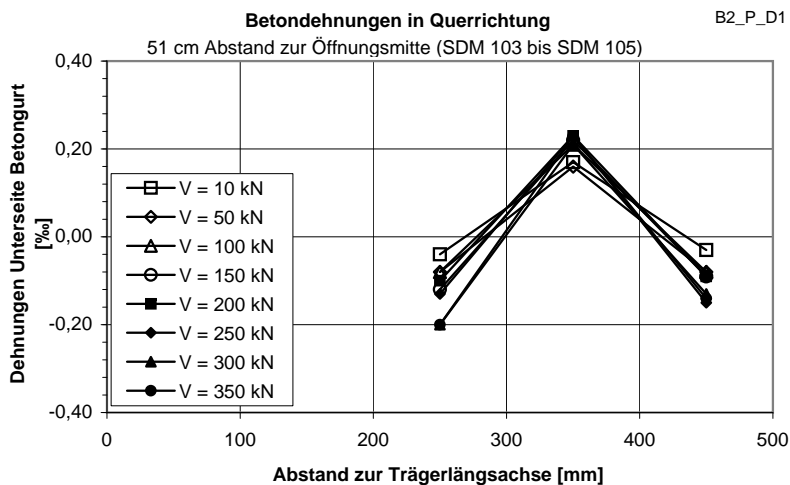
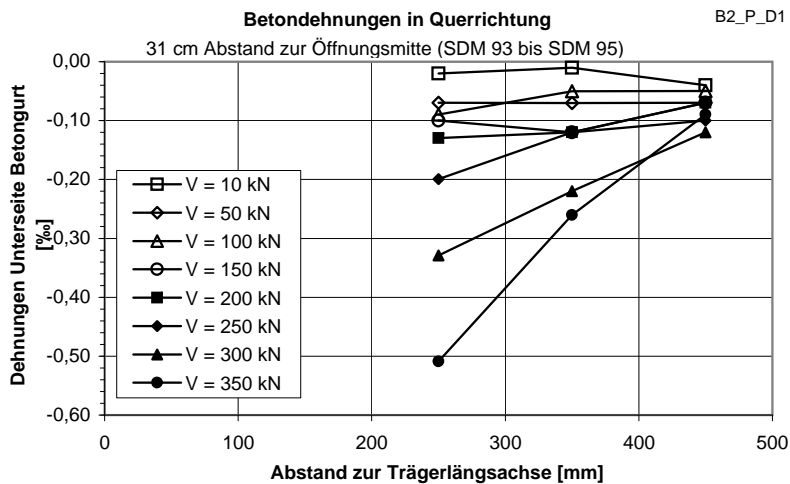






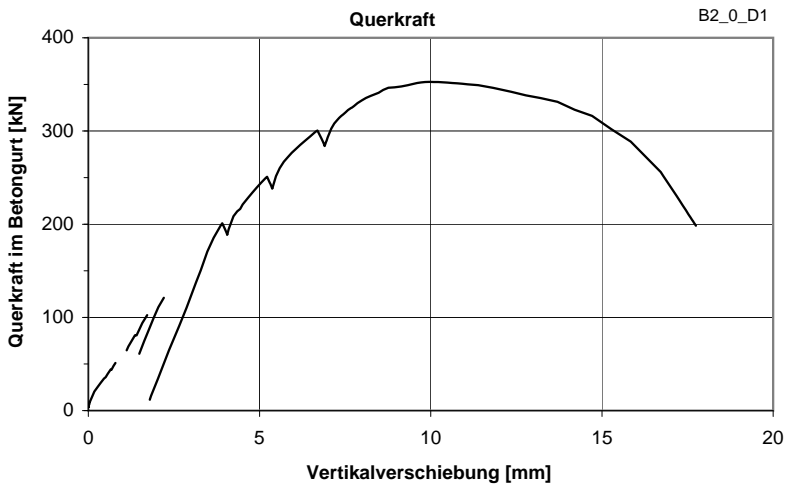
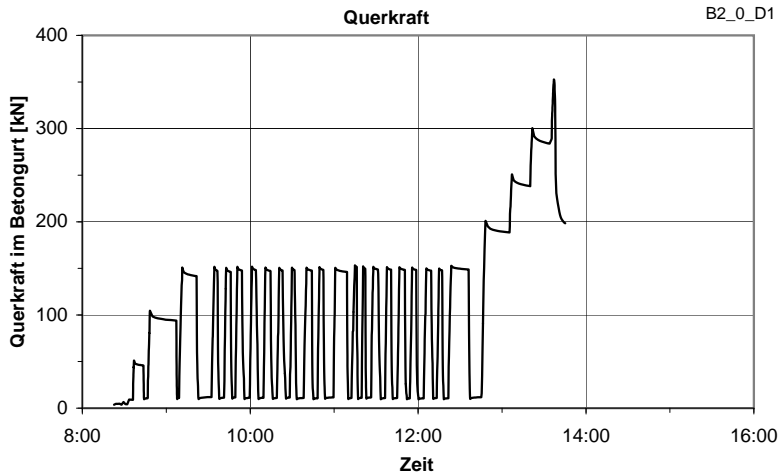


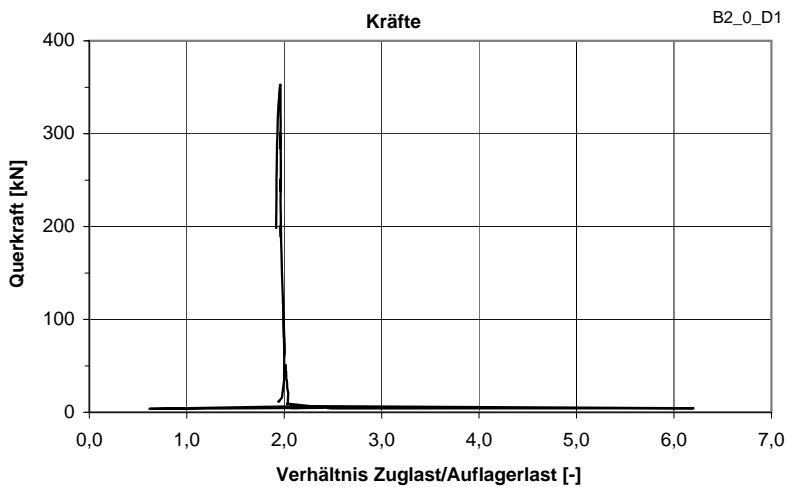
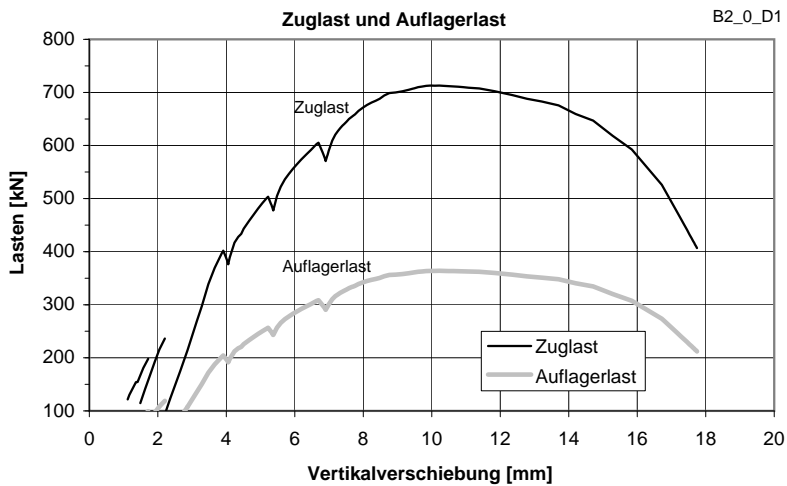




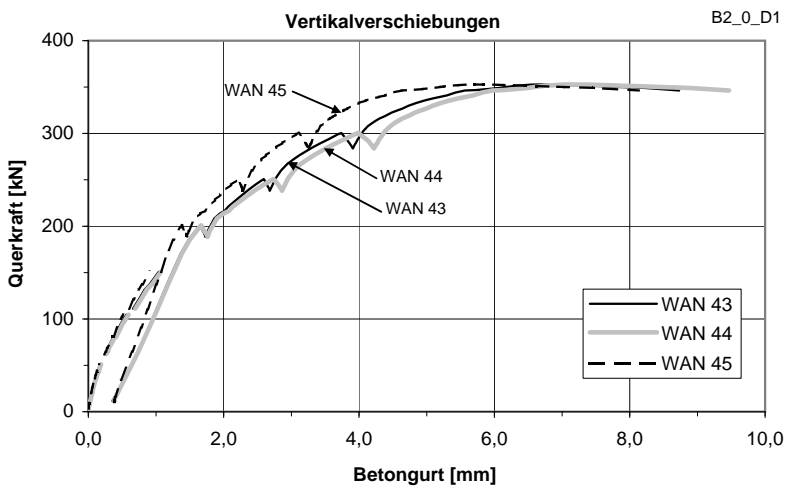
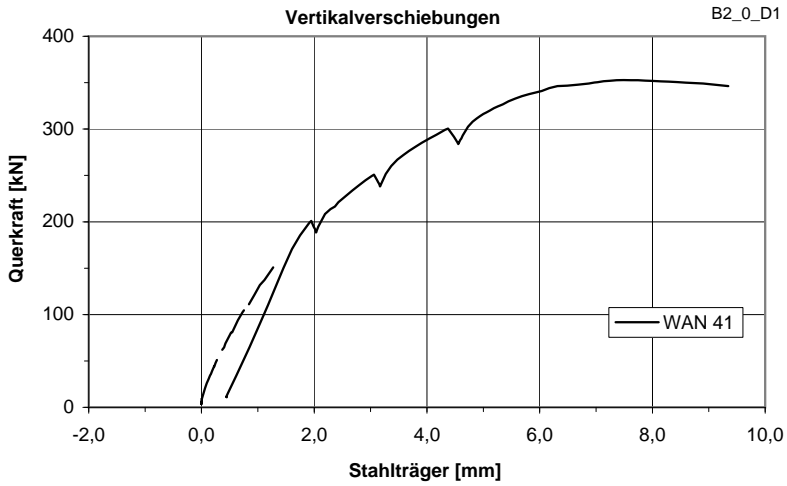
B.14. Versuch B2_0_D1

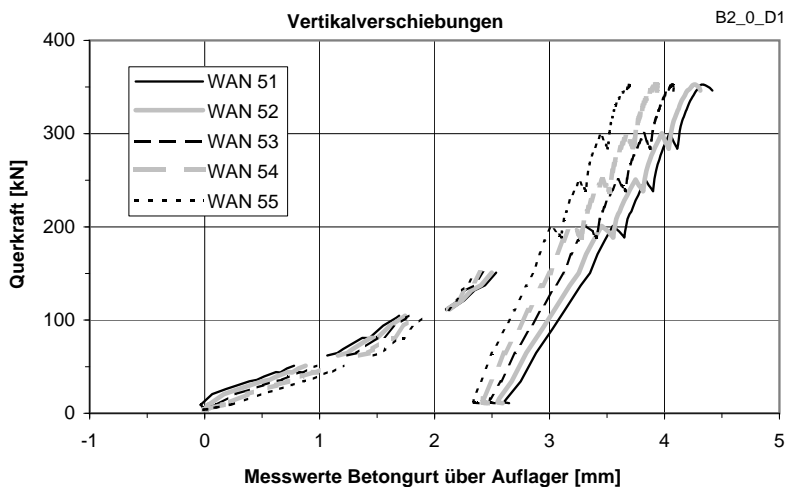
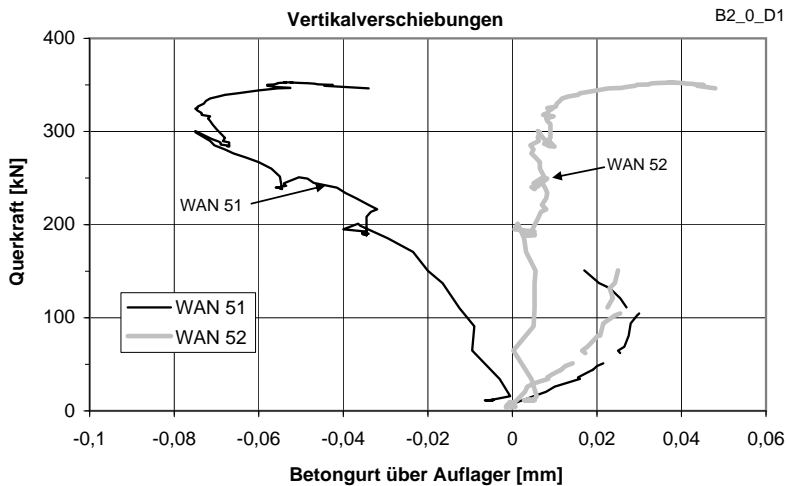
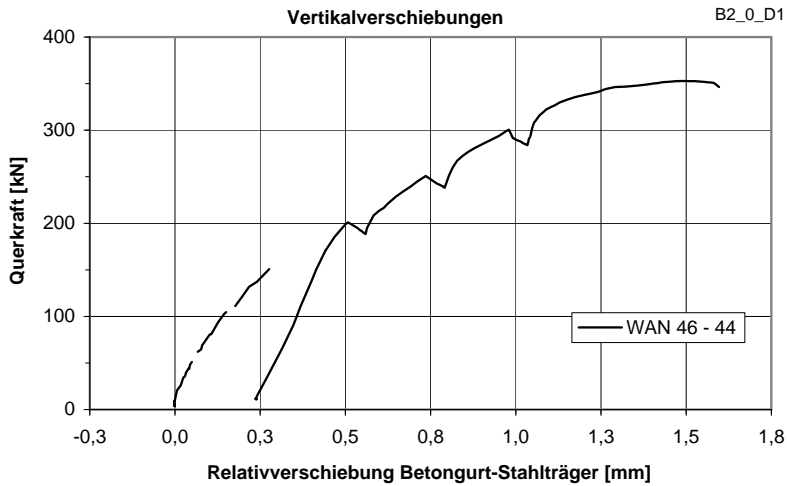
B.14.1. Kräfte



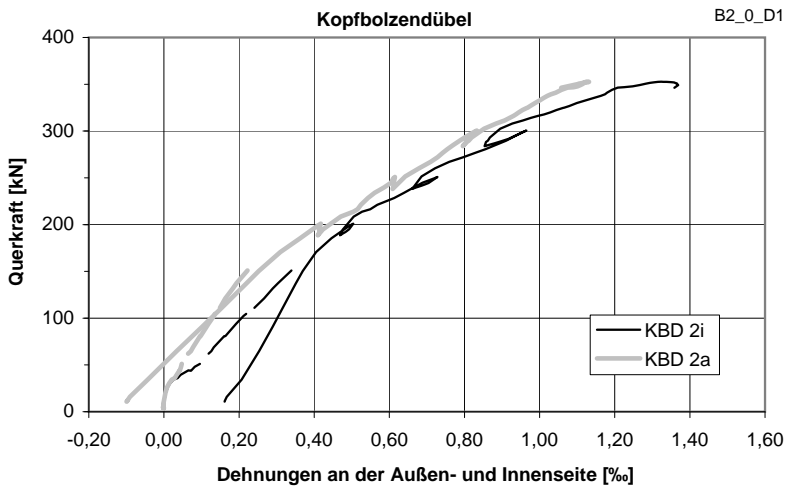
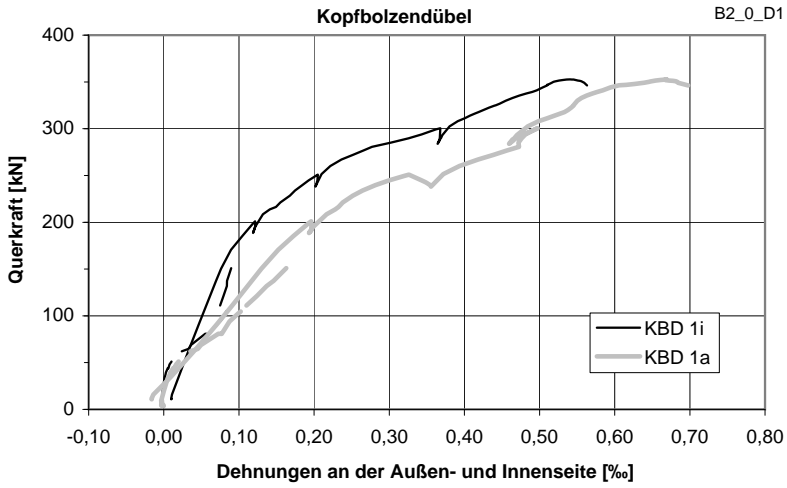


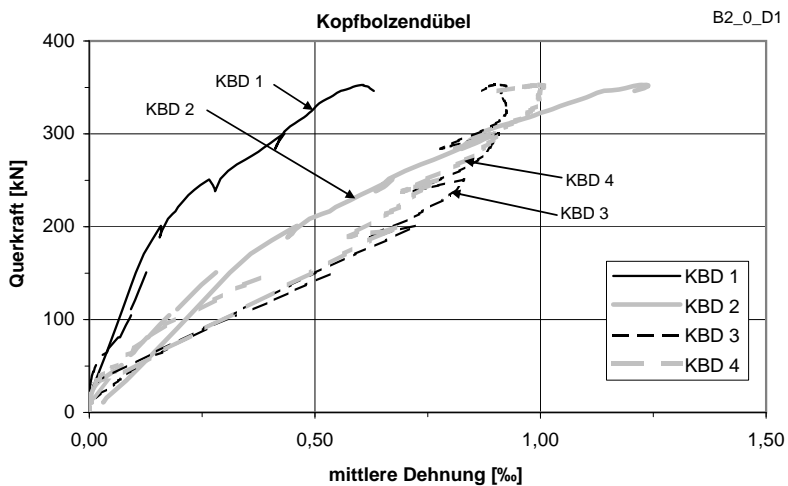
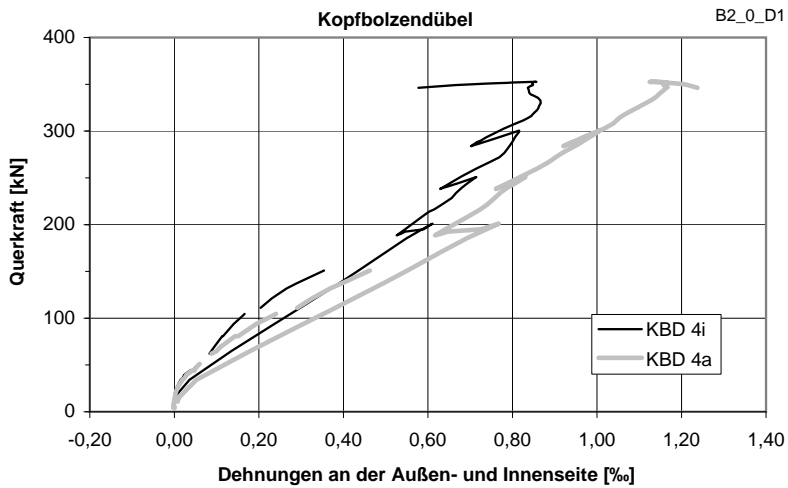
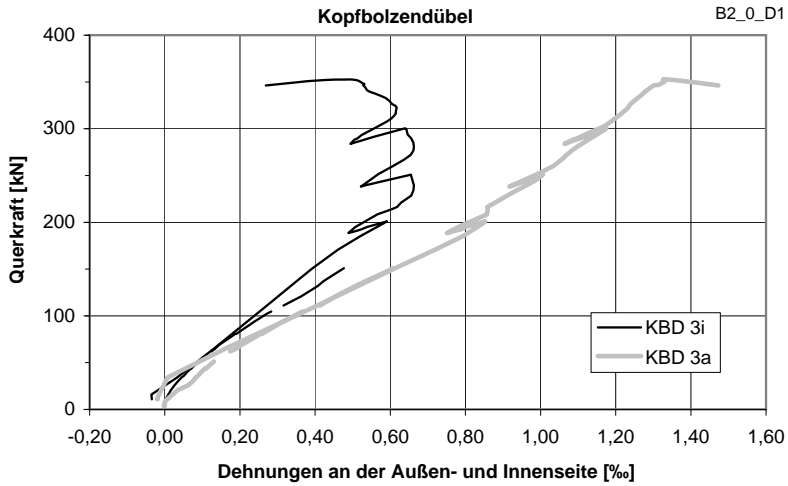
B.14.2. Verformungen

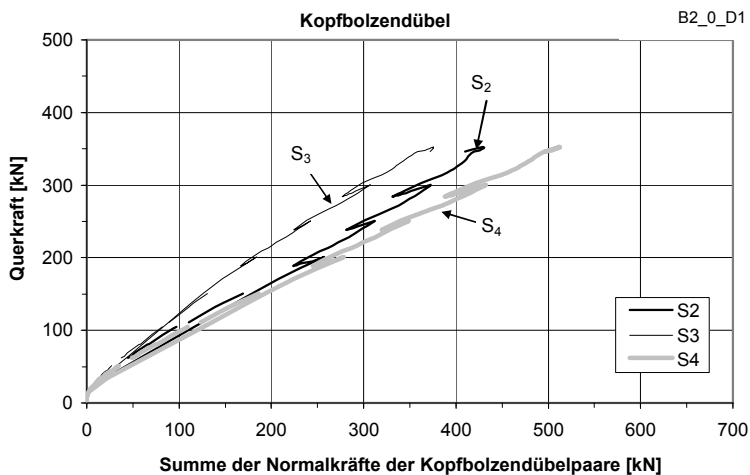
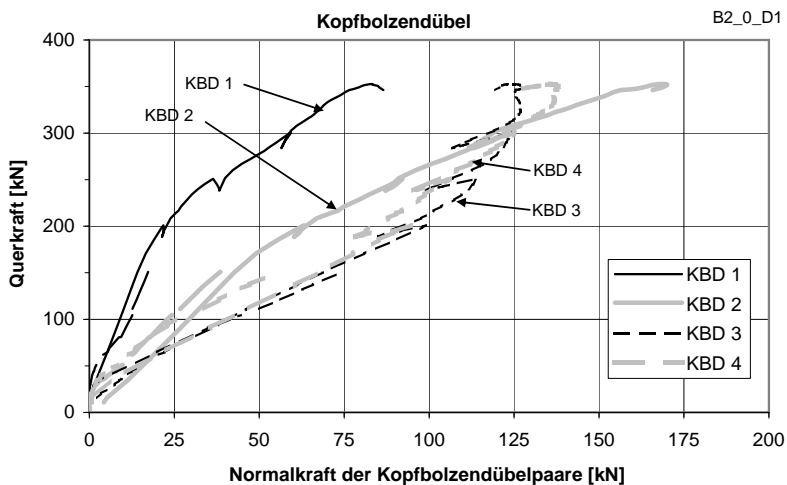
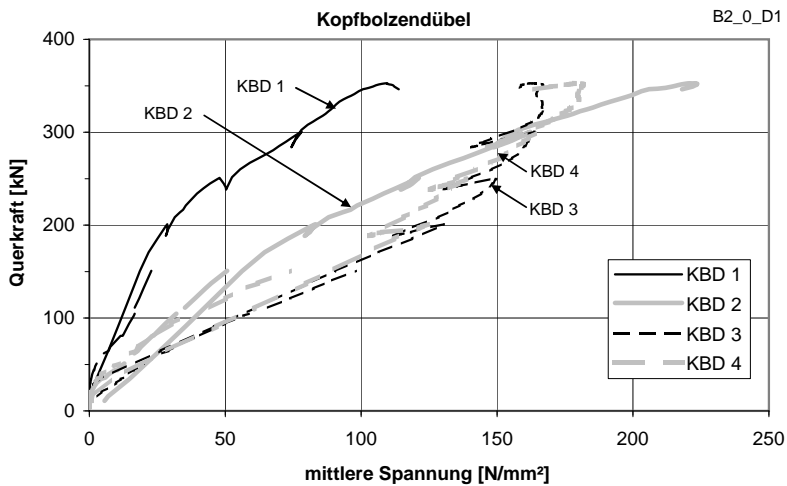




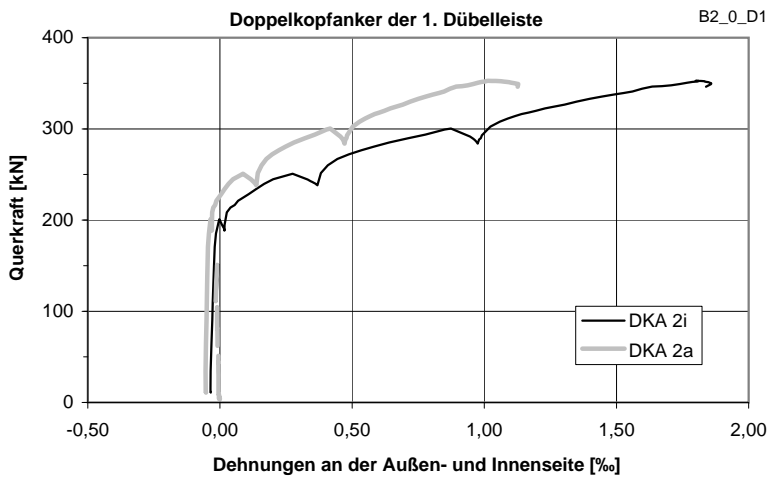
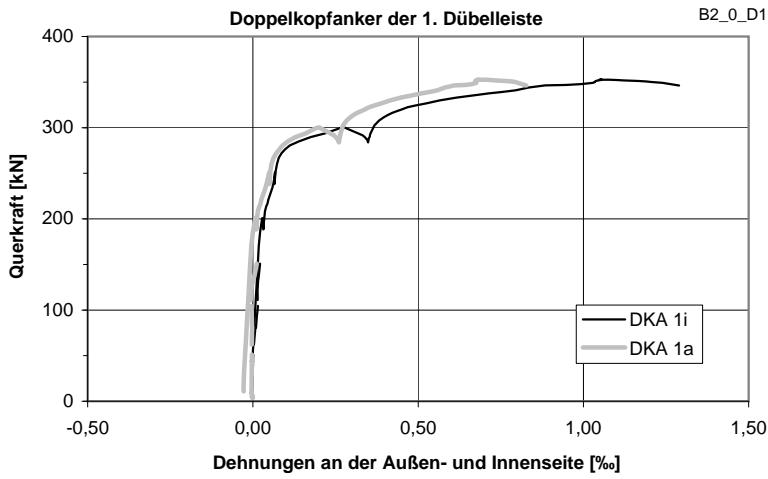
B.14.3. Kopfbolzendübel

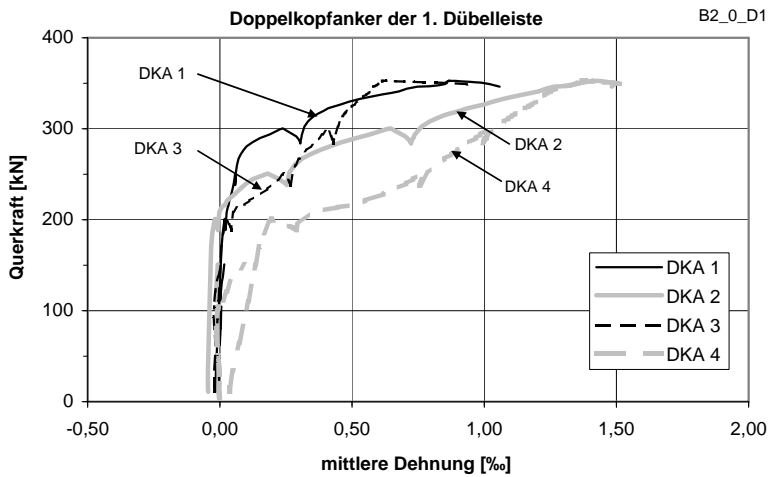
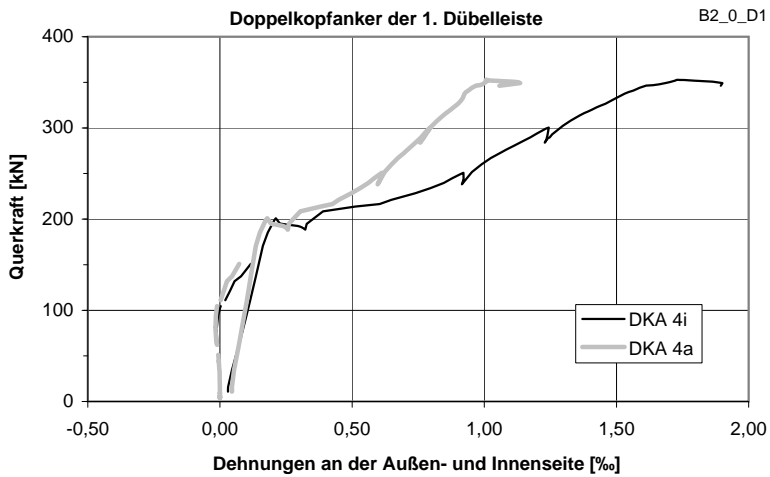
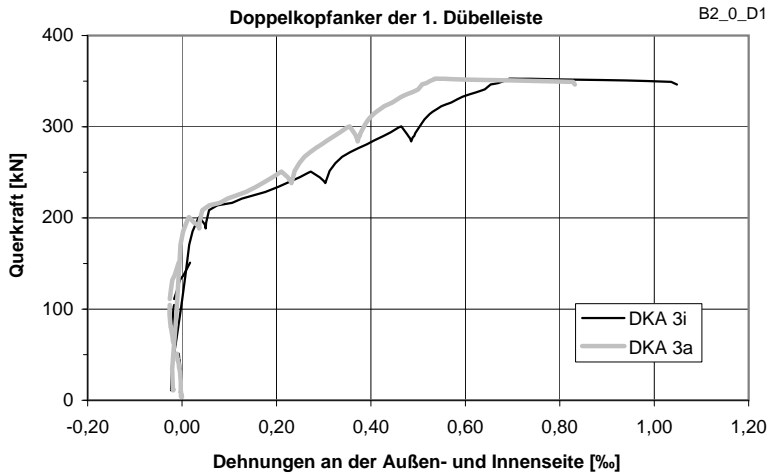


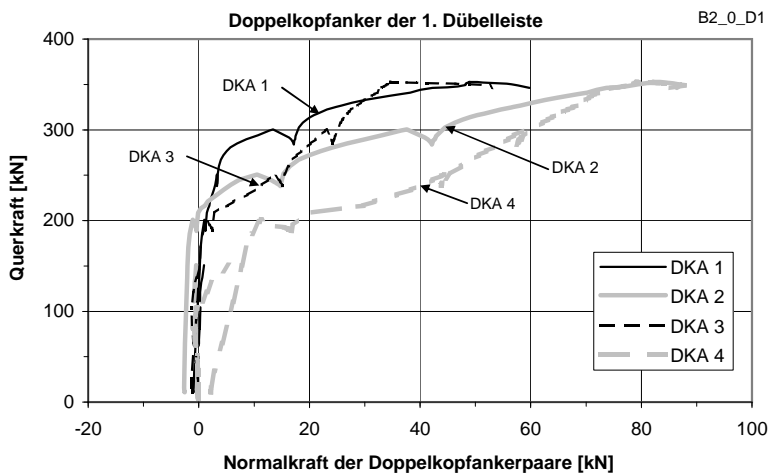
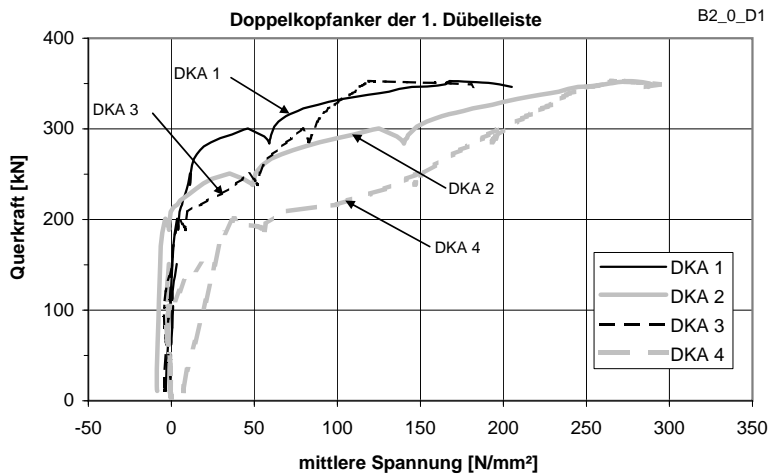




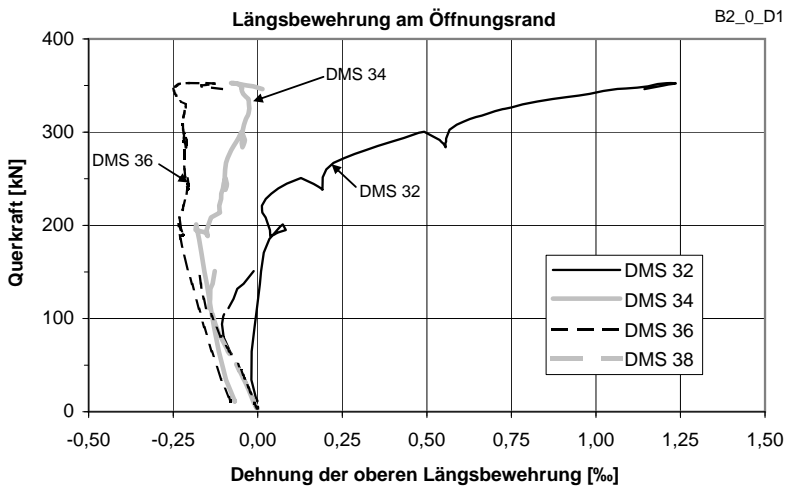
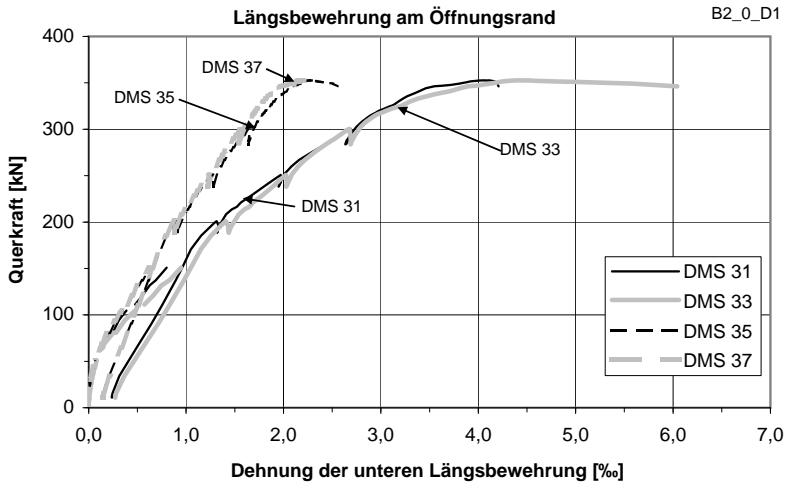
B.14.4. Doppelkopfanker

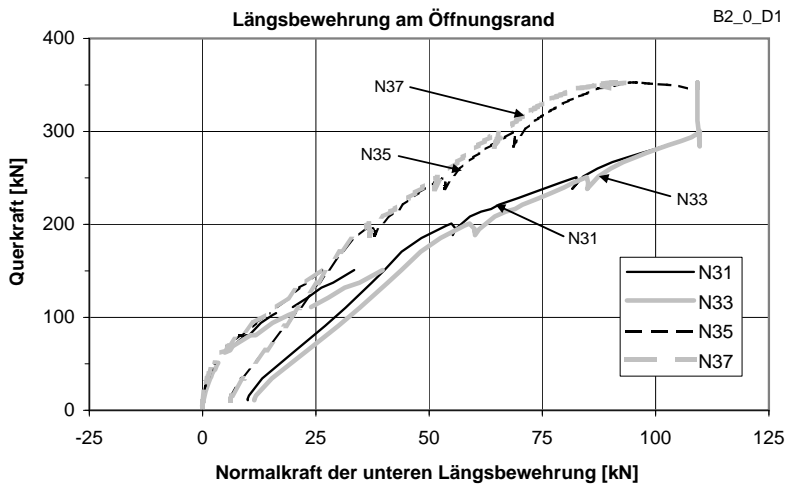
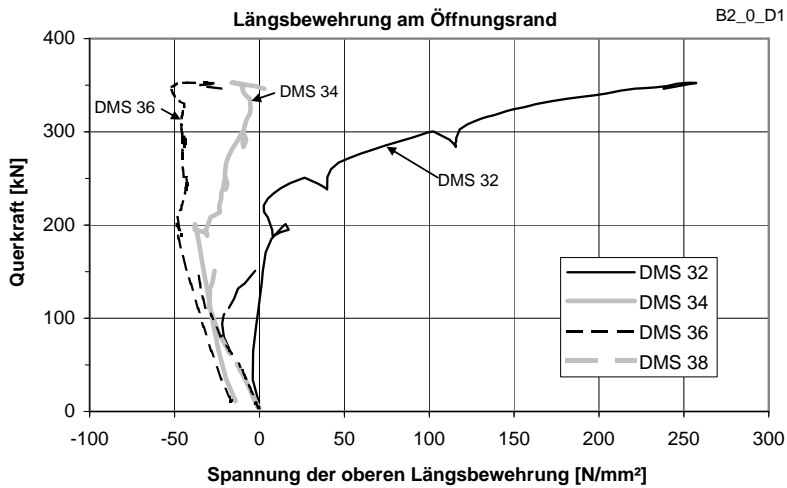
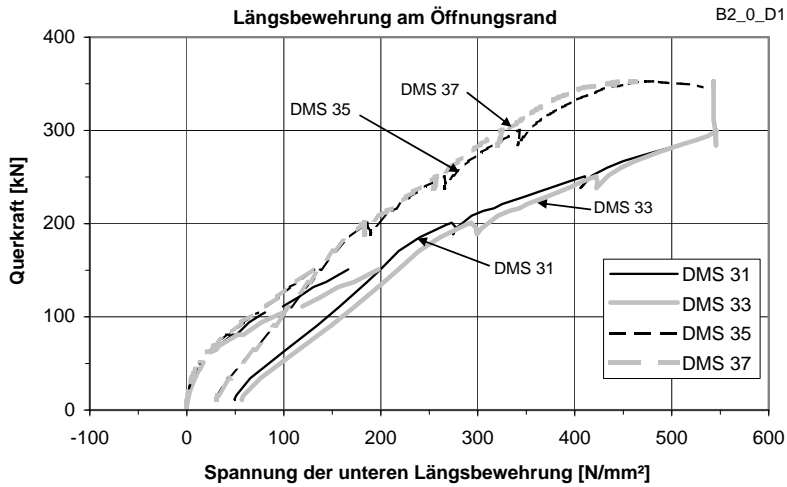


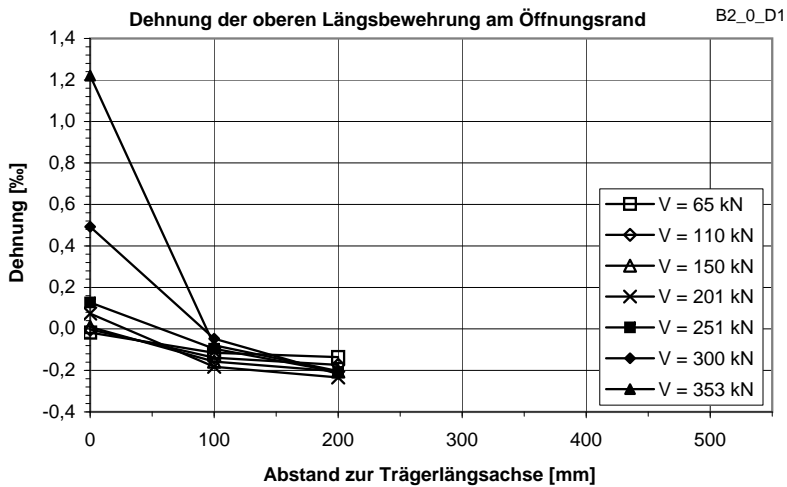
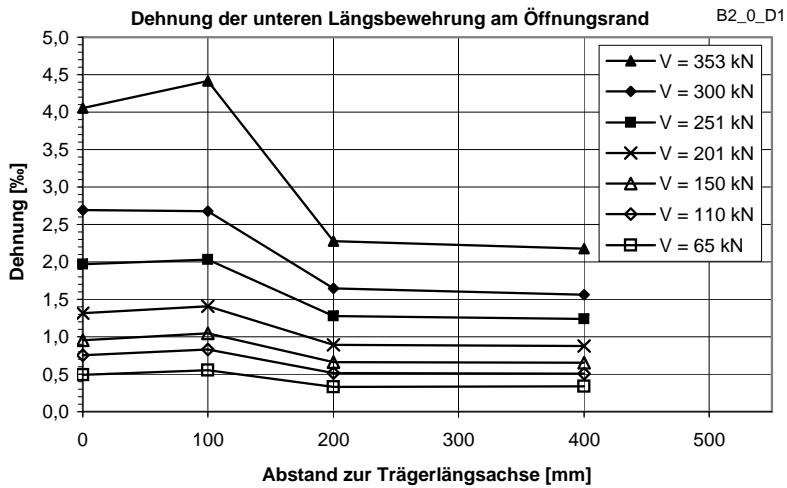
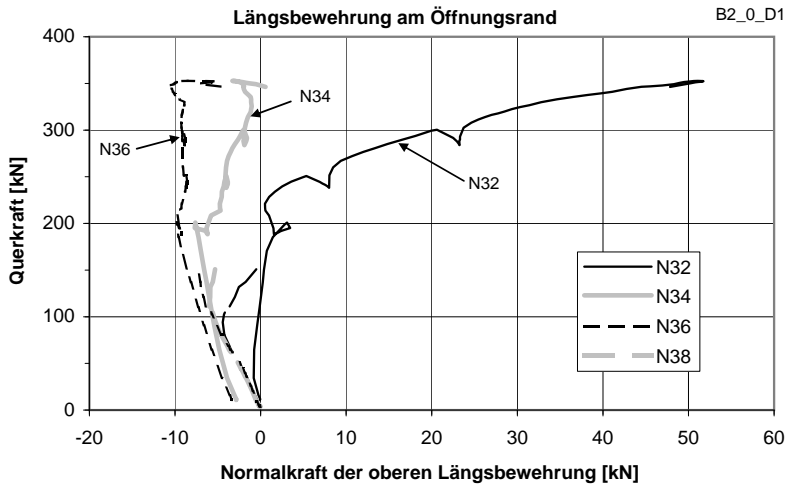


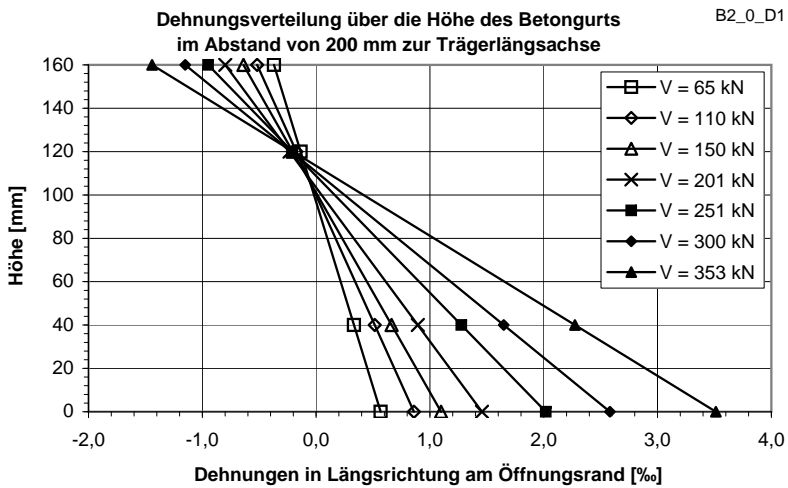
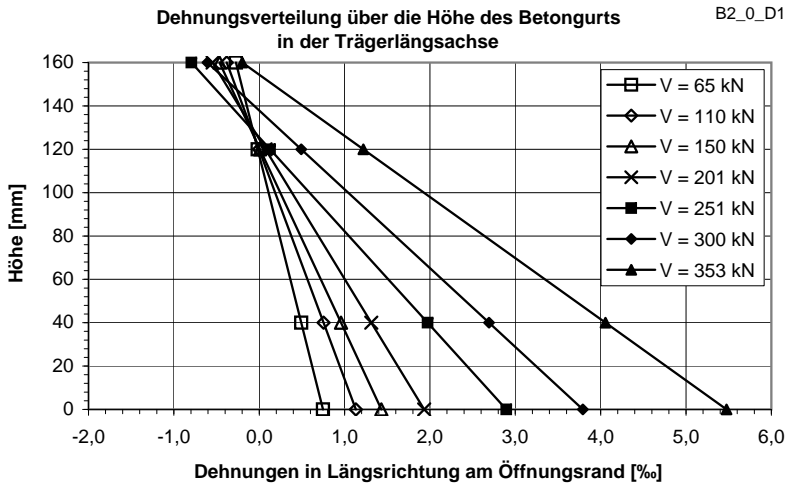


B.14.5. Längsbewehrung

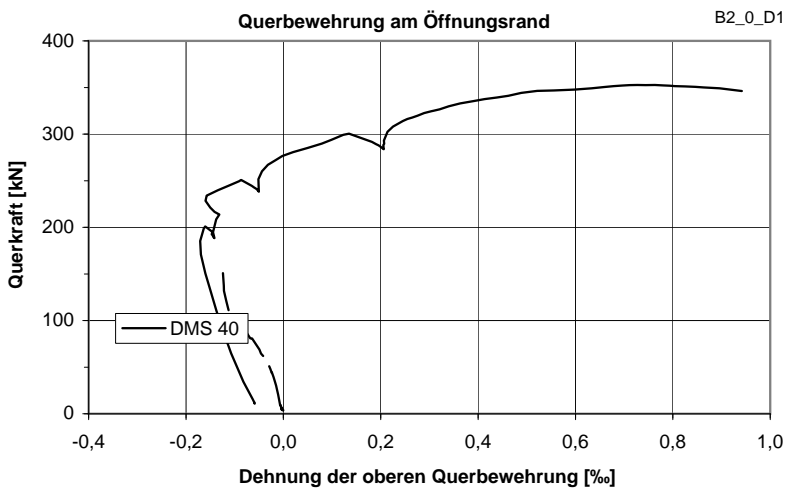
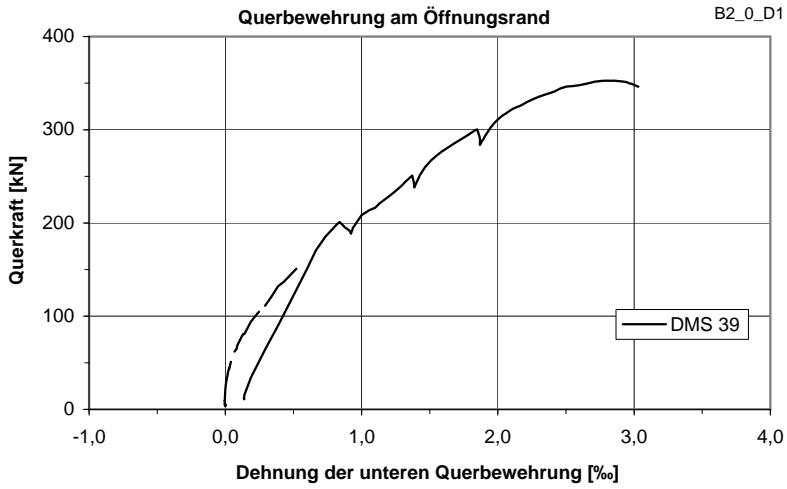


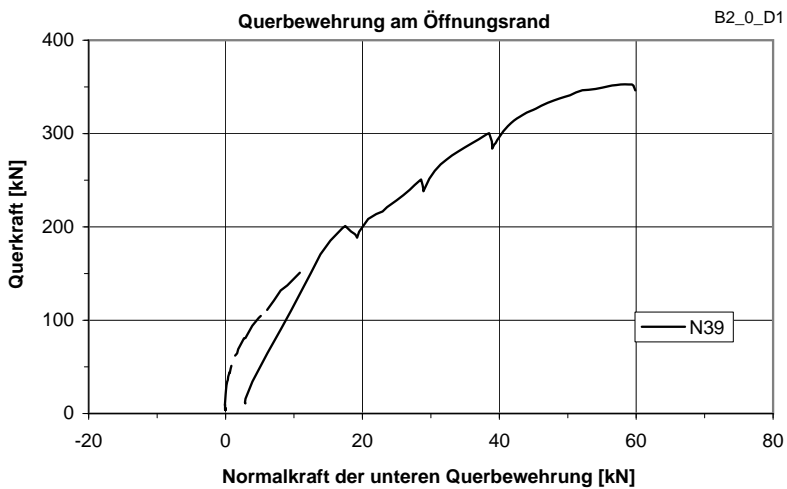
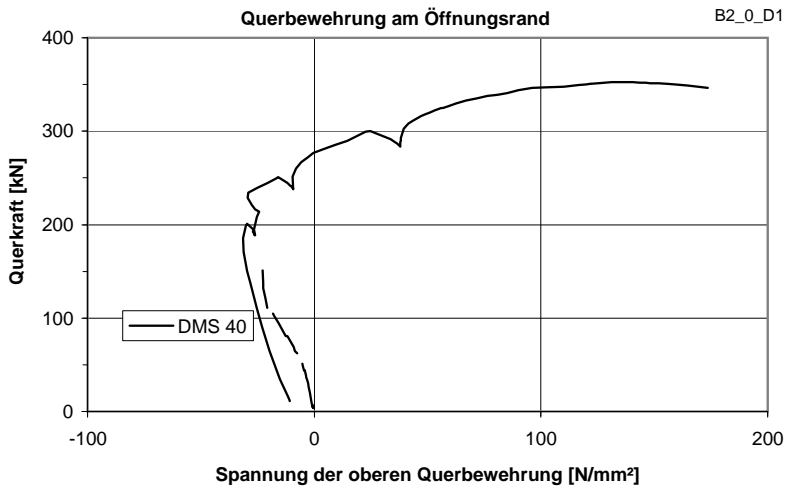
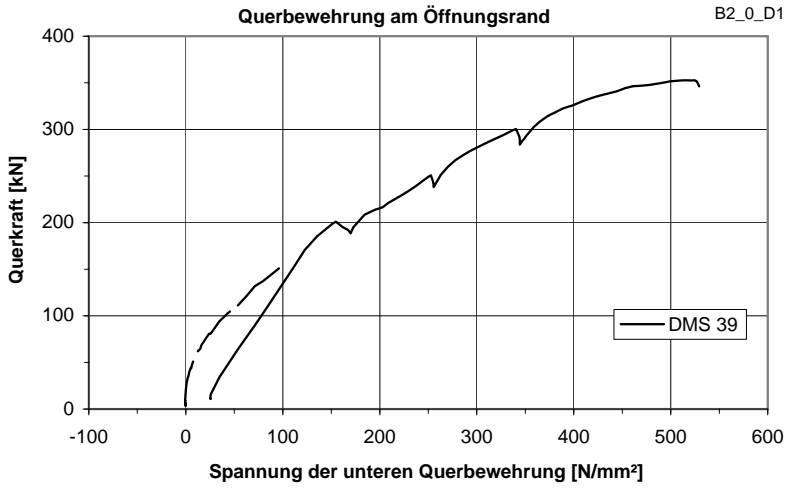


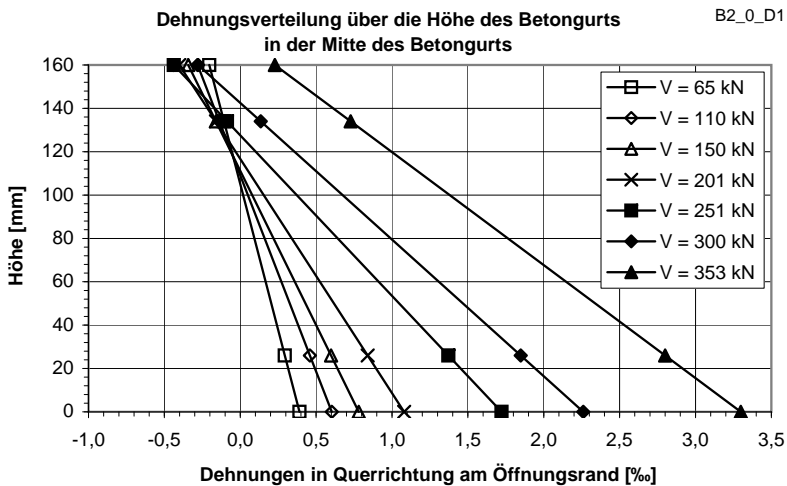
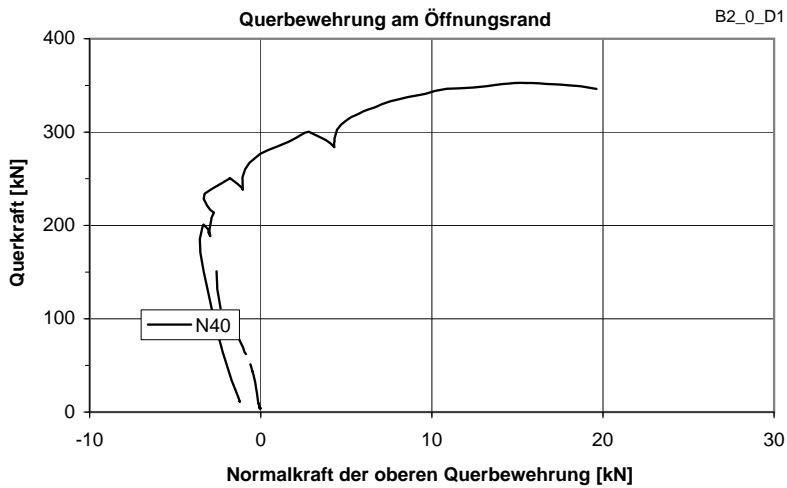




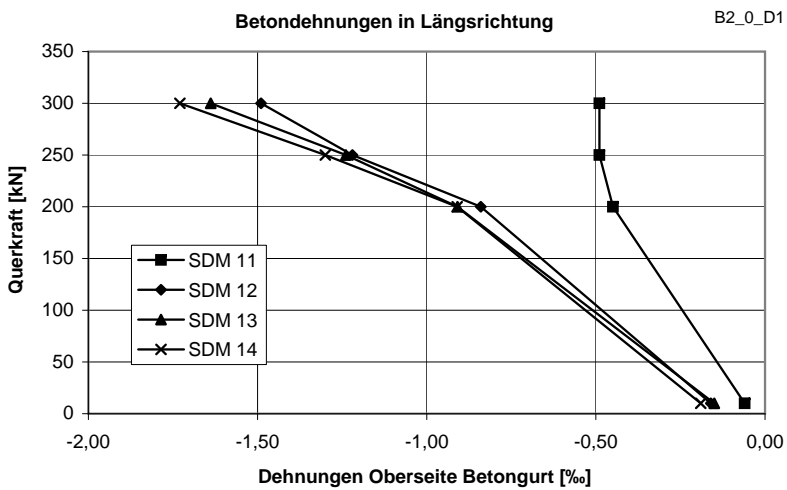
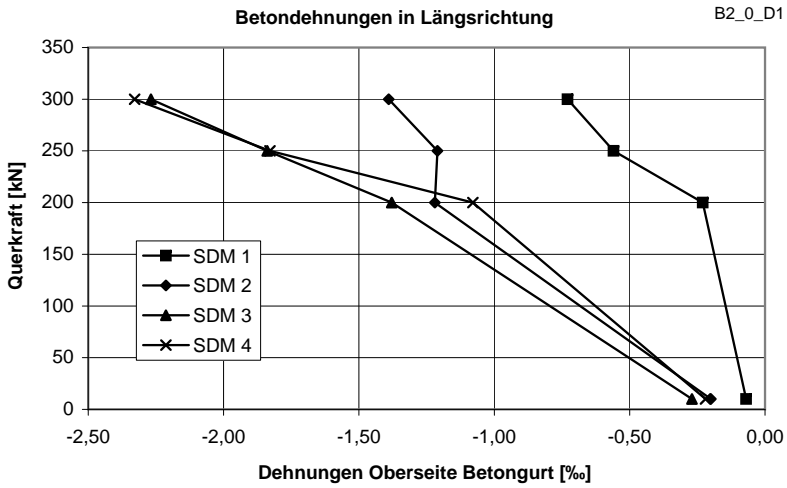
B.14.6. Querbewehrung

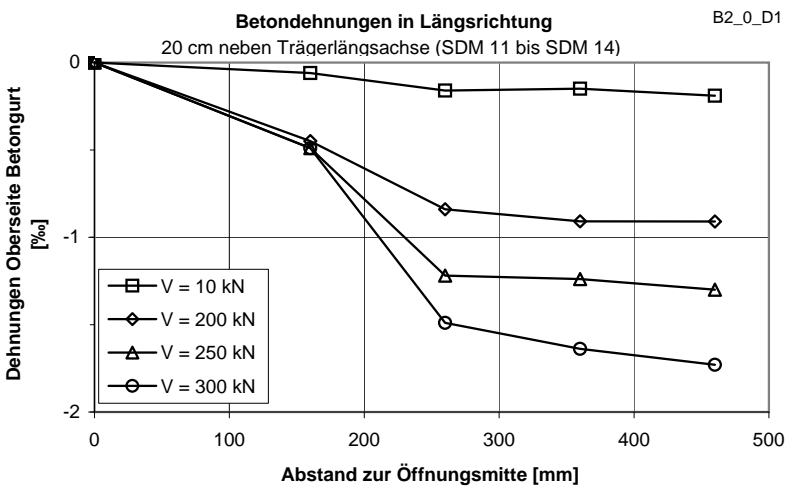
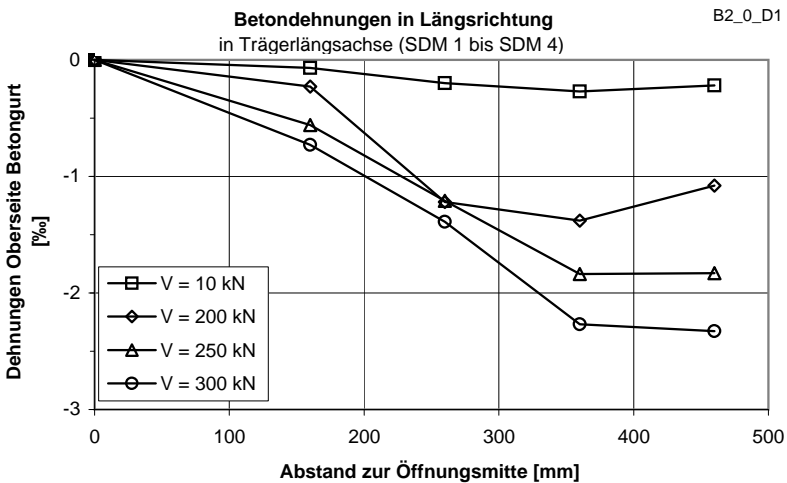
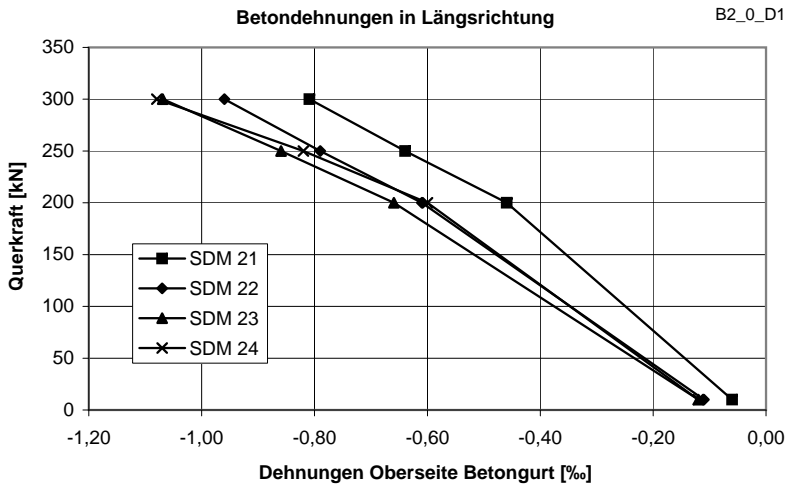


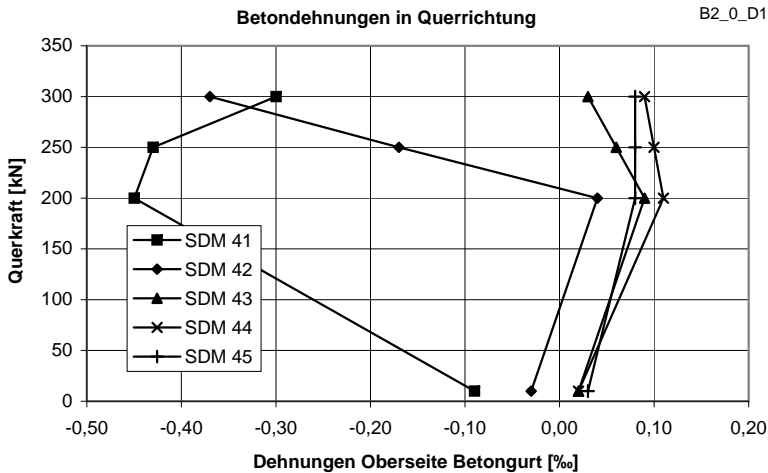
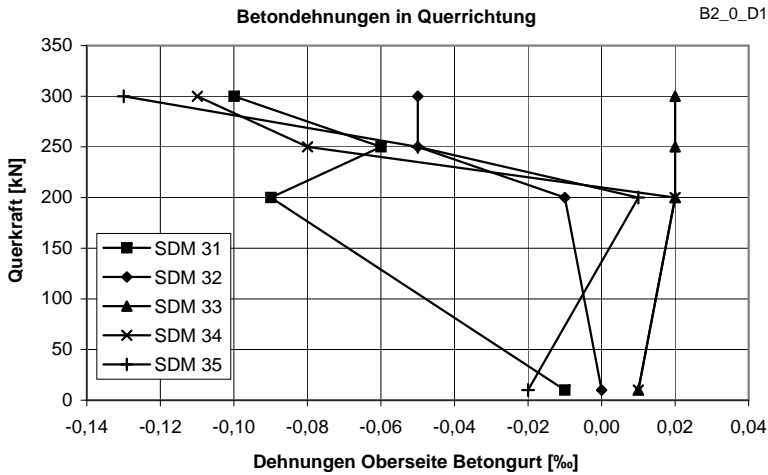
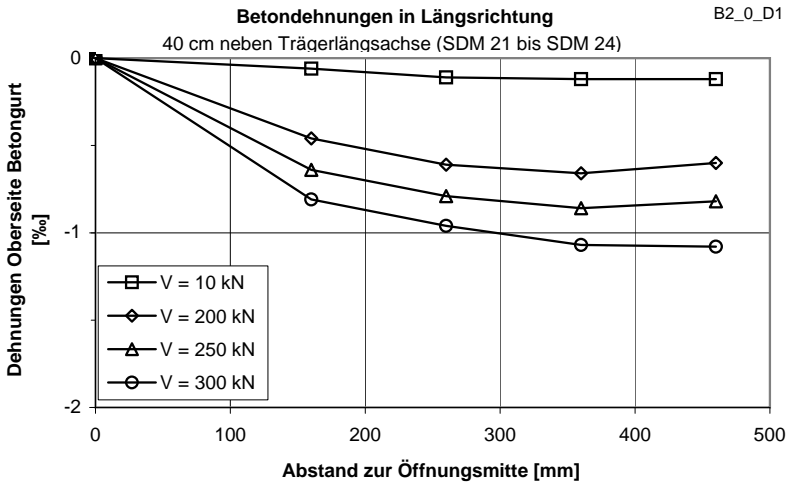


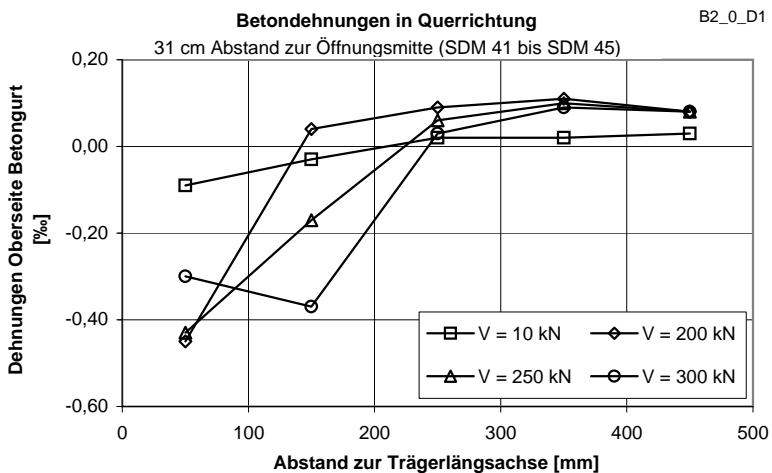
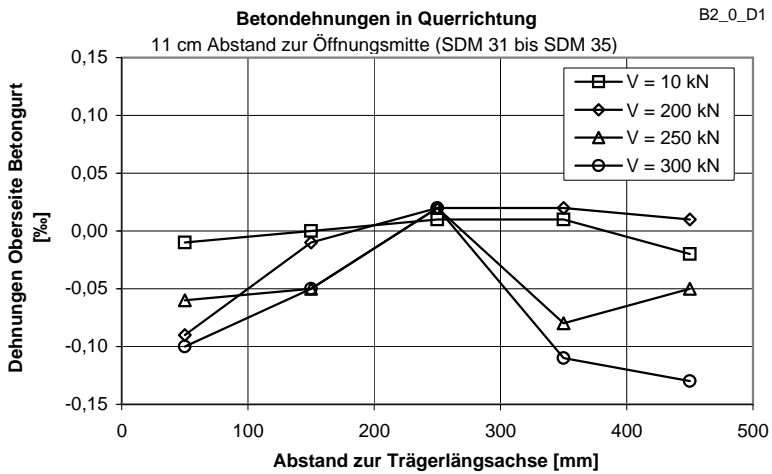
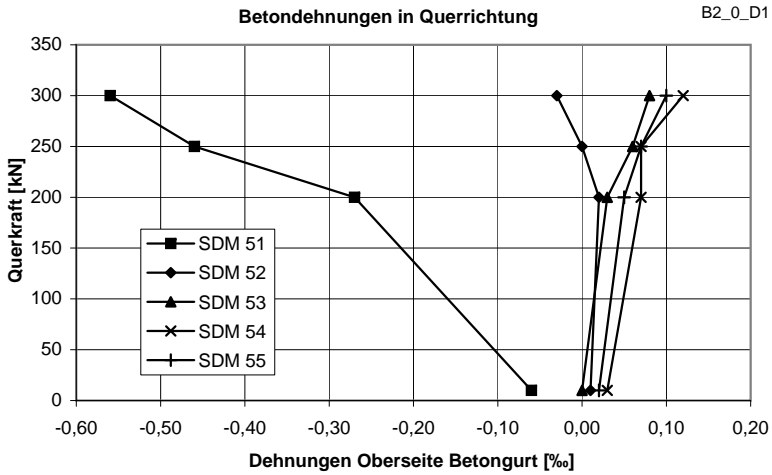


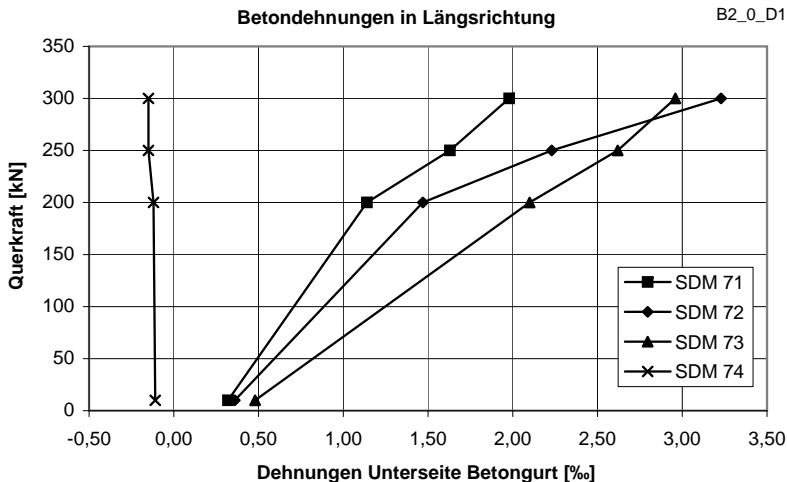
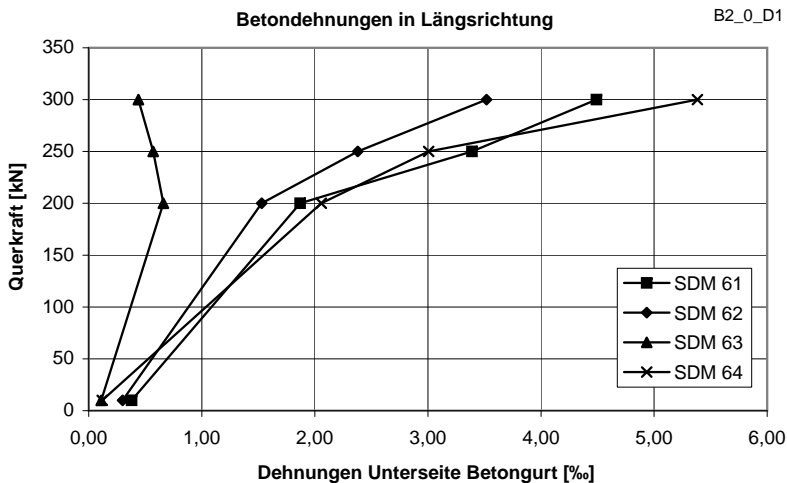
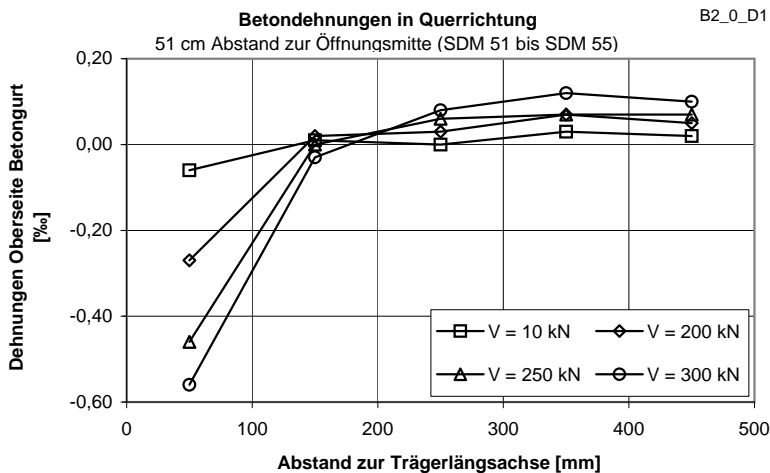
B.14.7. Betondehnungen

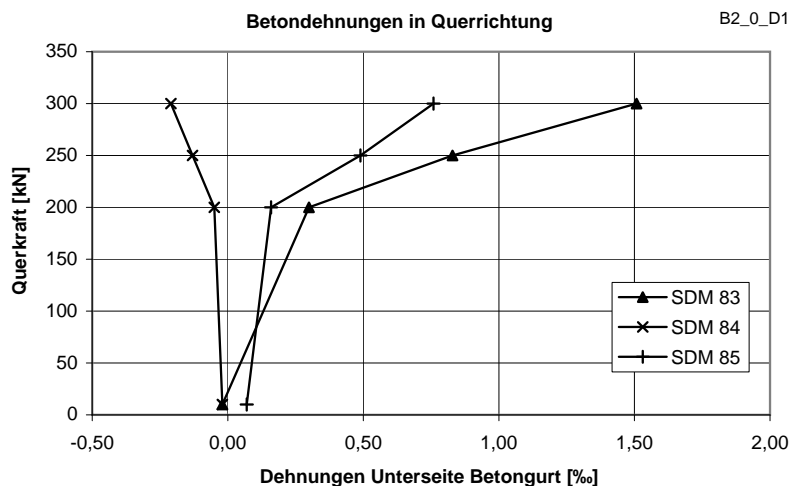
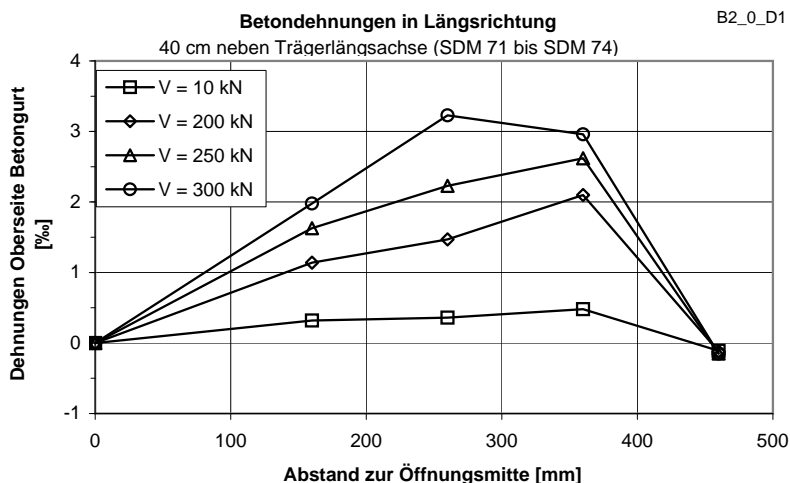
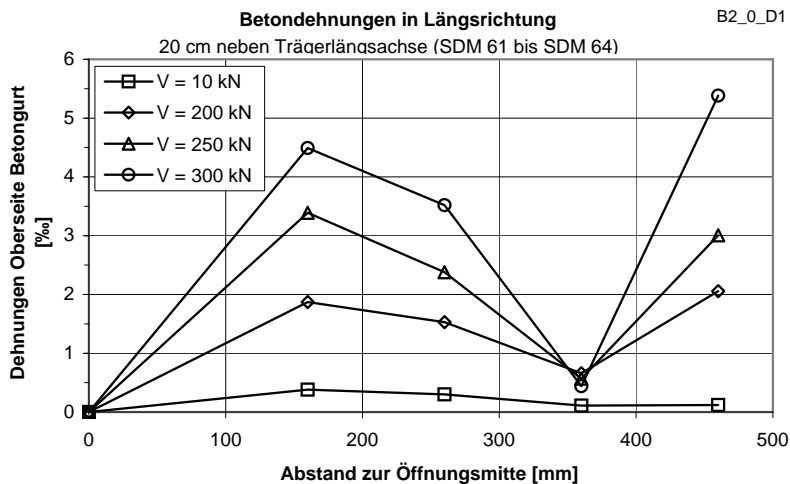


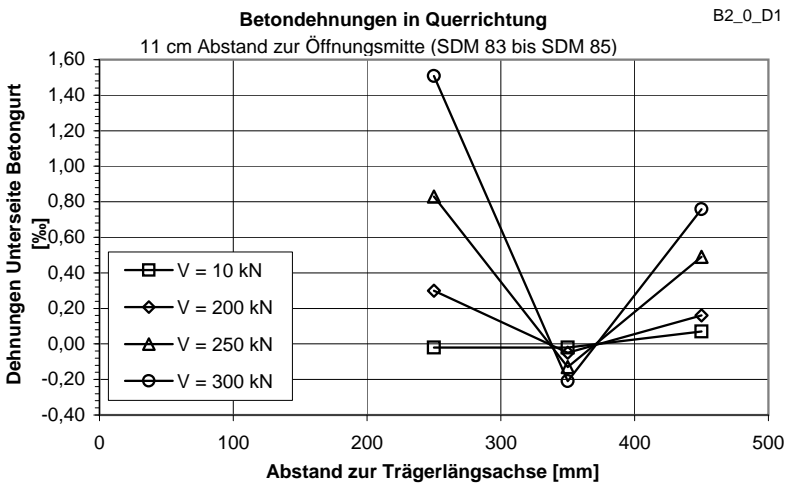
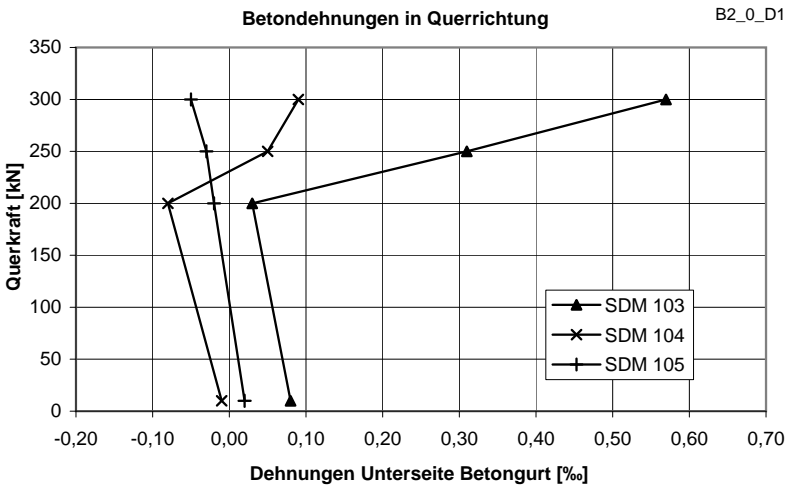
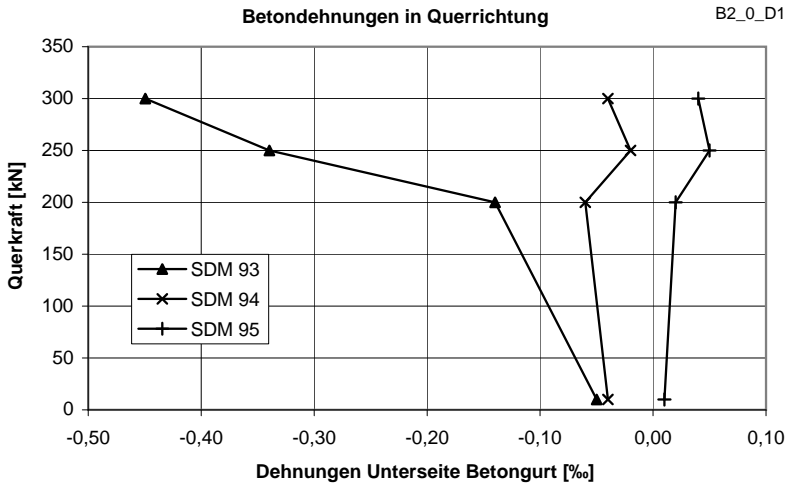


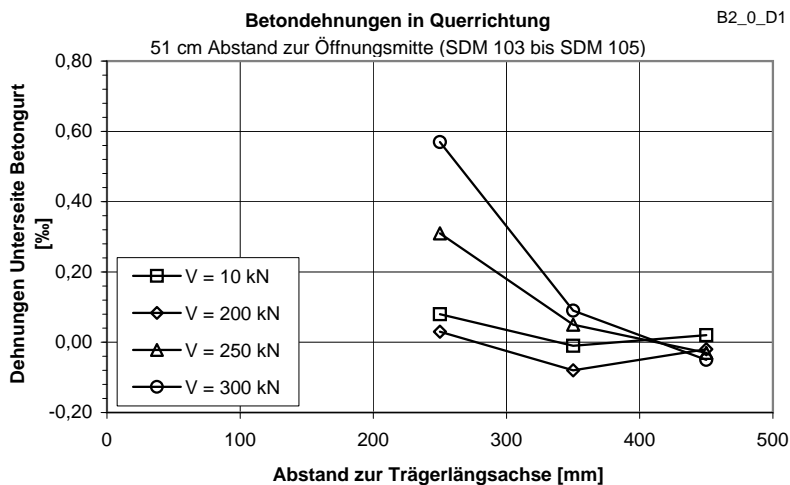
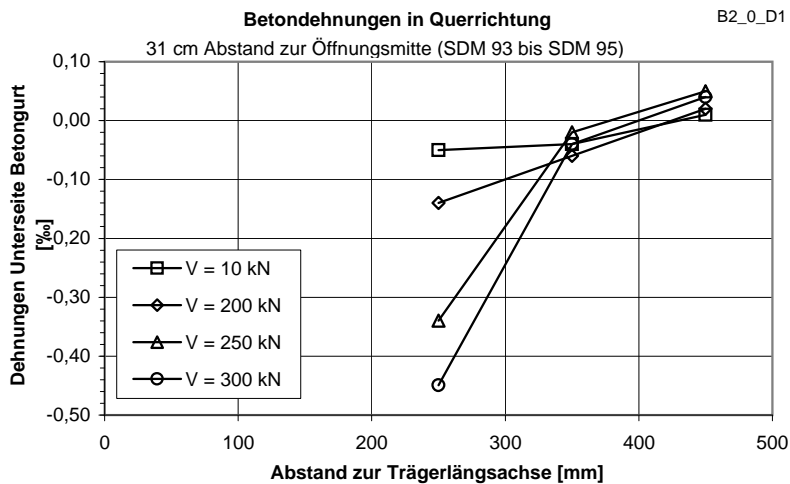






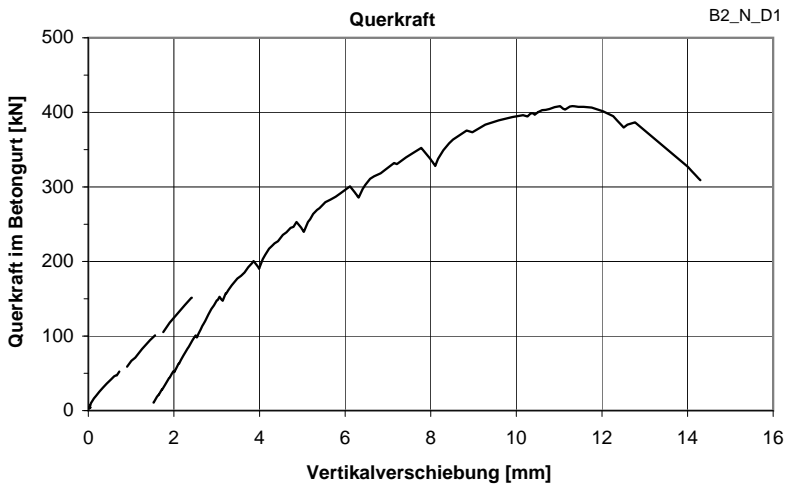
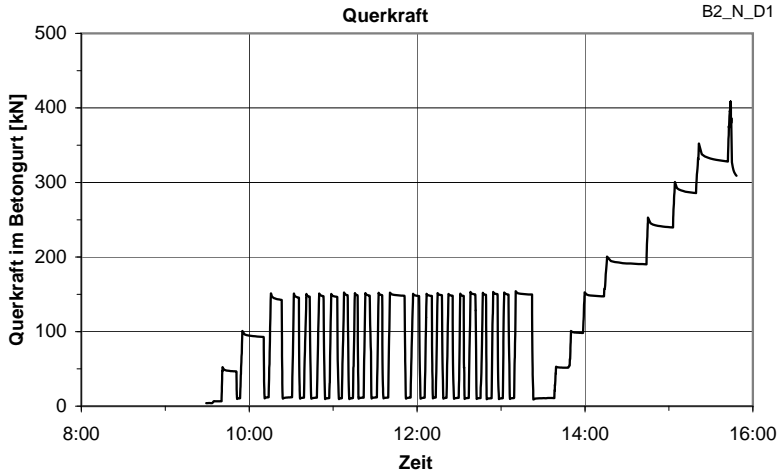


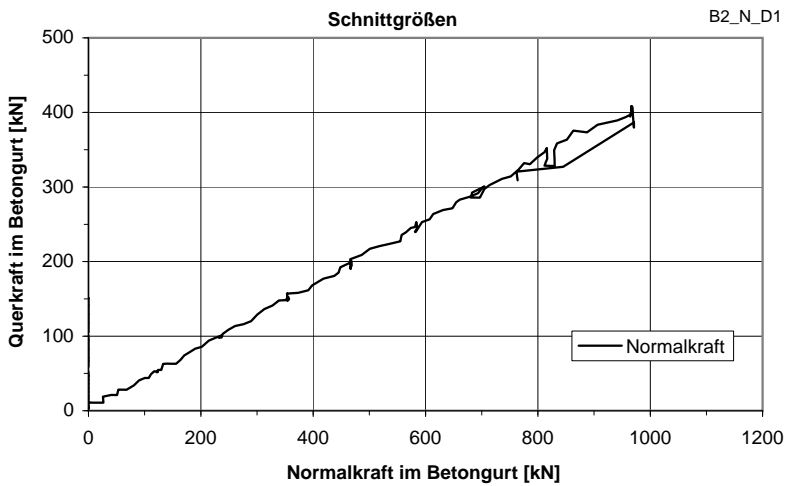
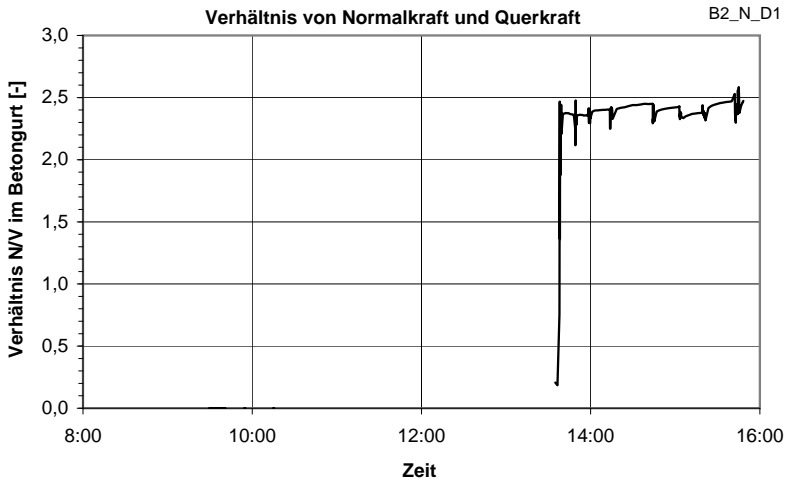
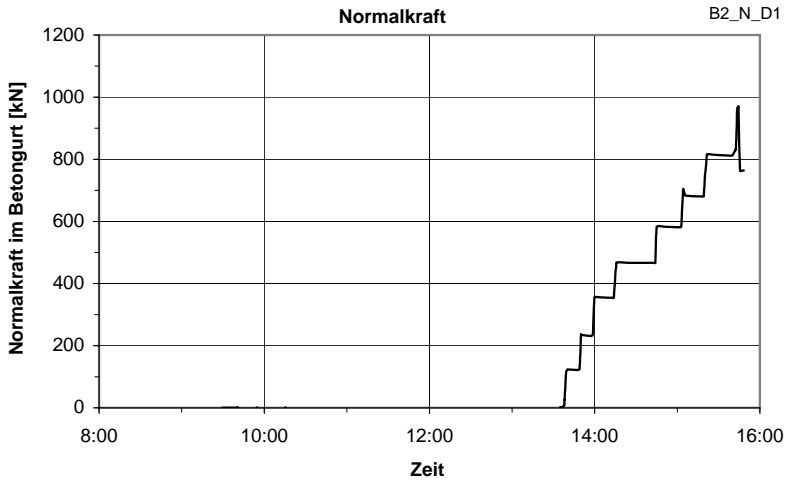


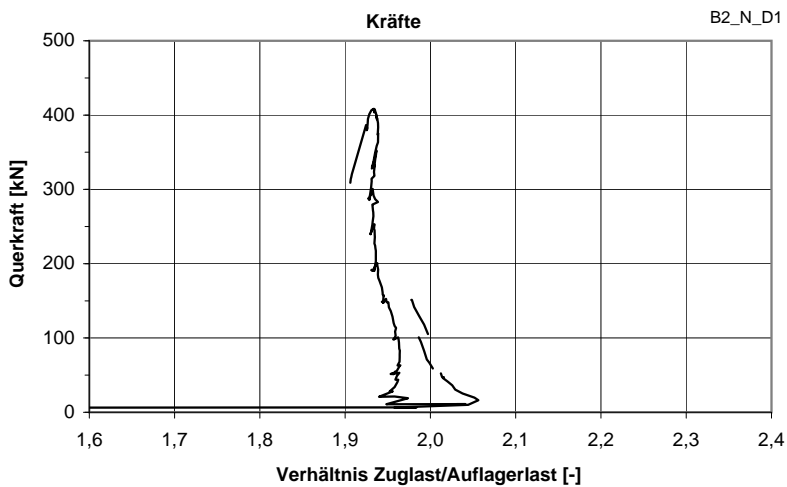
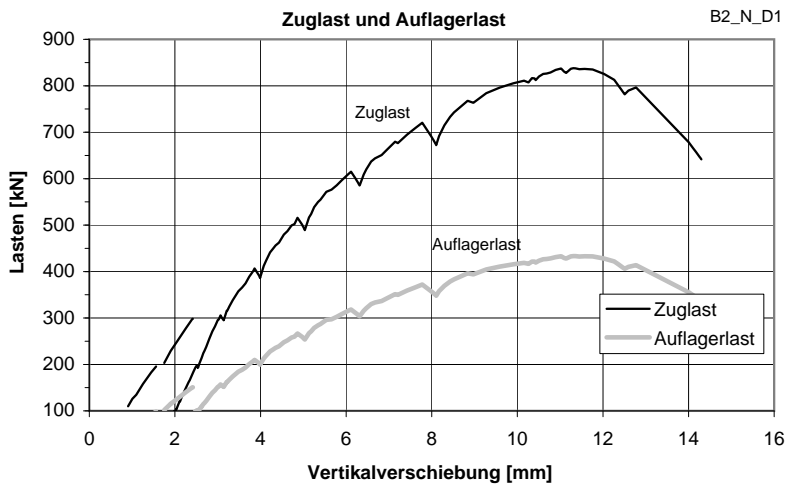


B.15. Versuch B2_N_D1

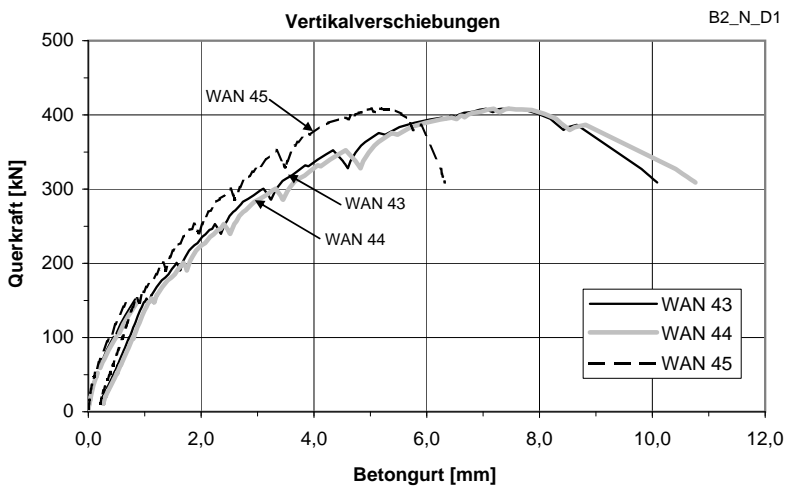
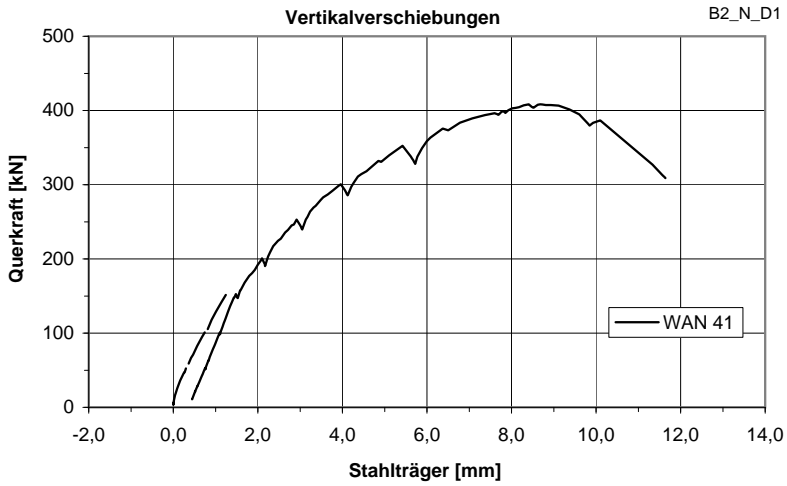
B.15.1. Kräfte

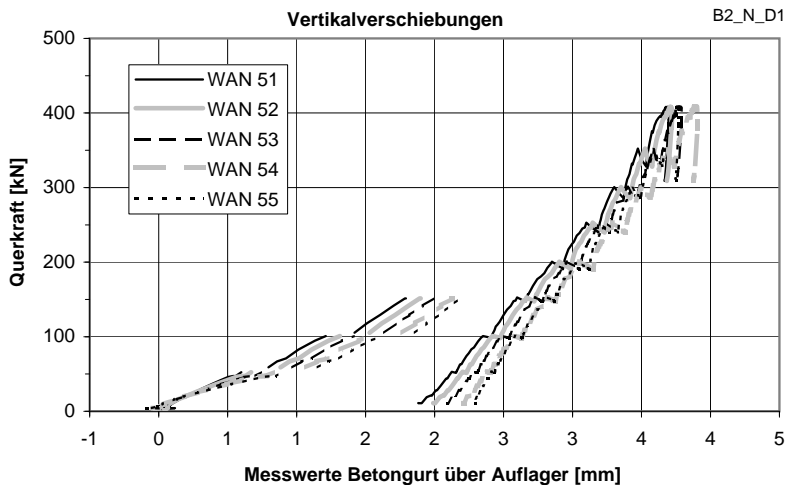
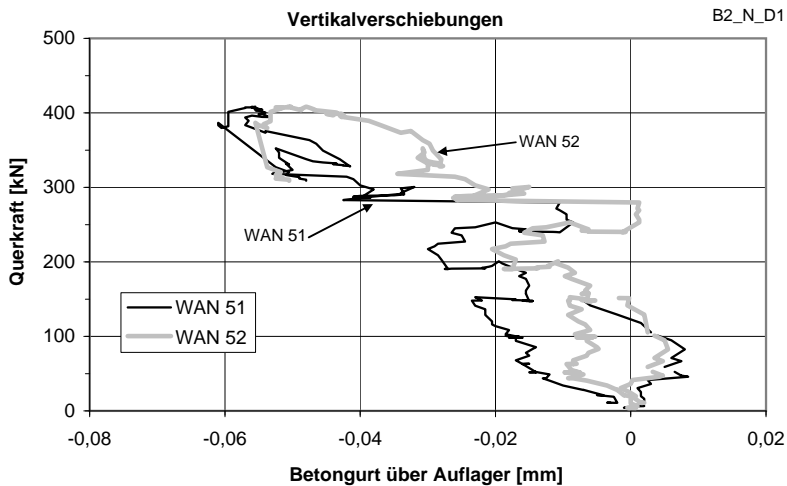
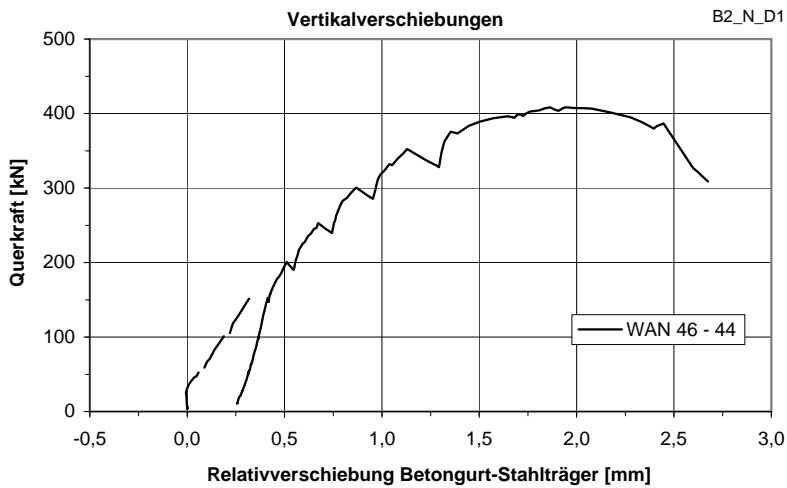




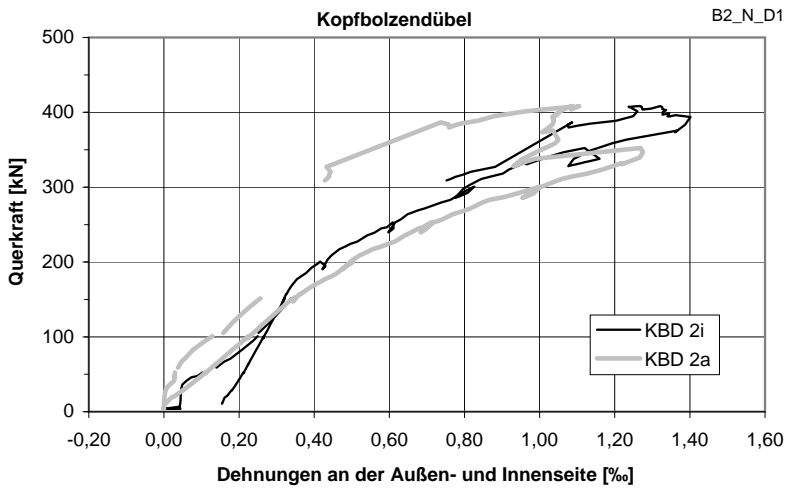
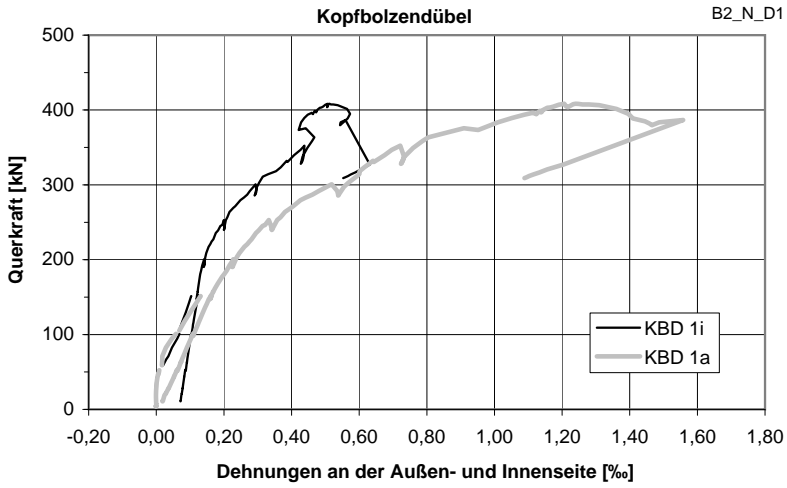


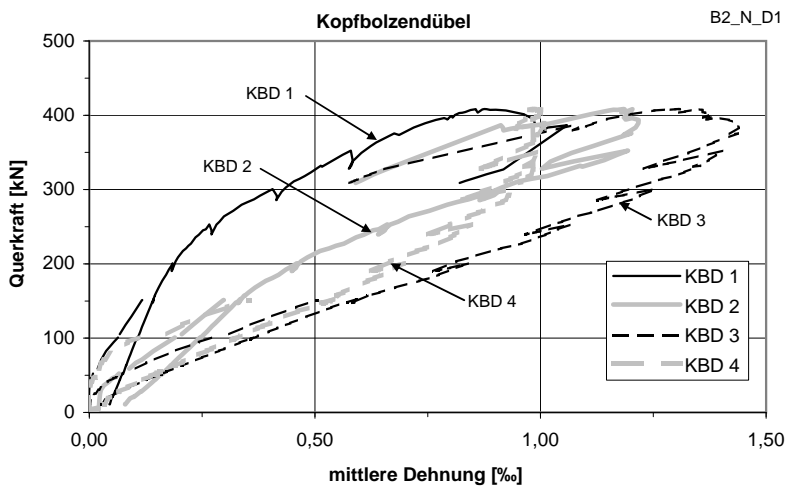
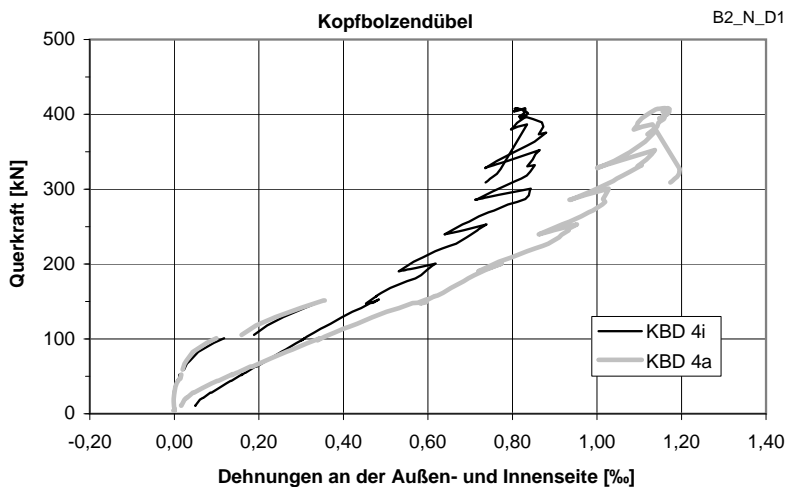
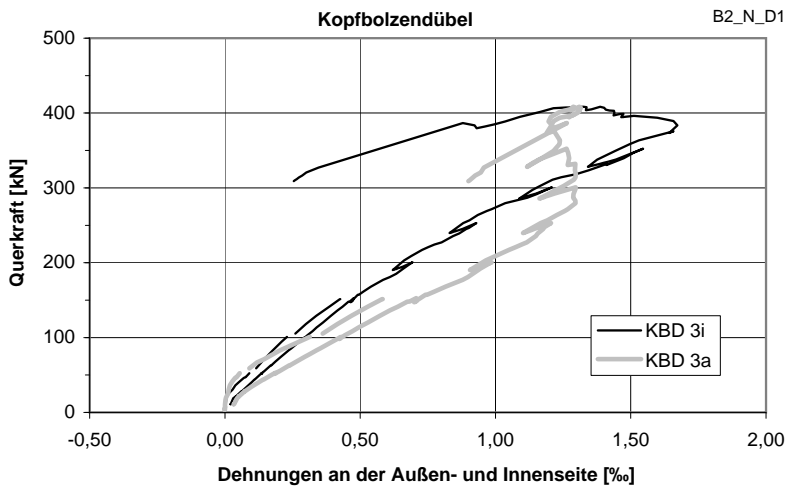
B.15.2. Verformungen

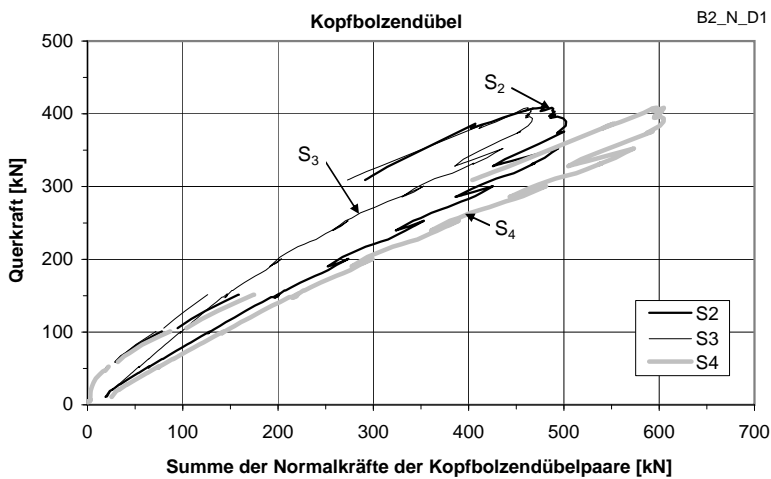
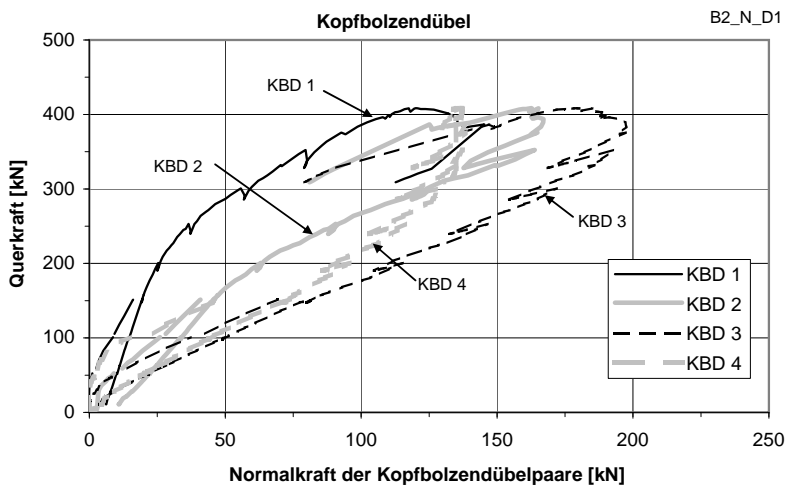
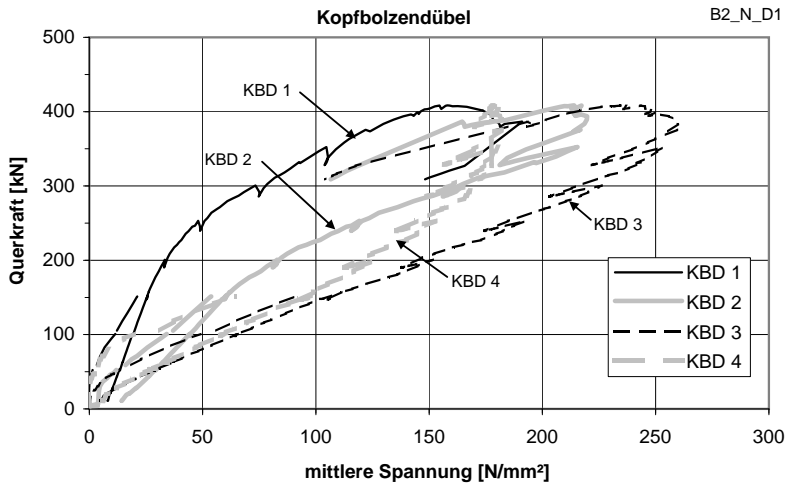




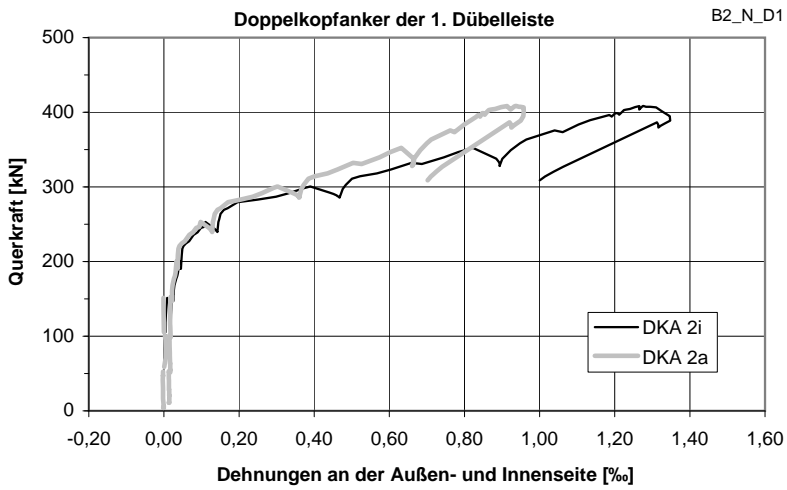
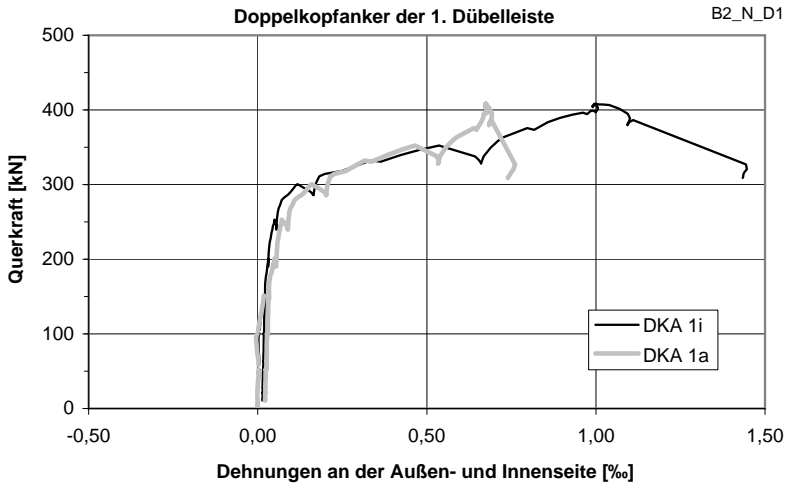
B.15.3. Kopfbolzendübel

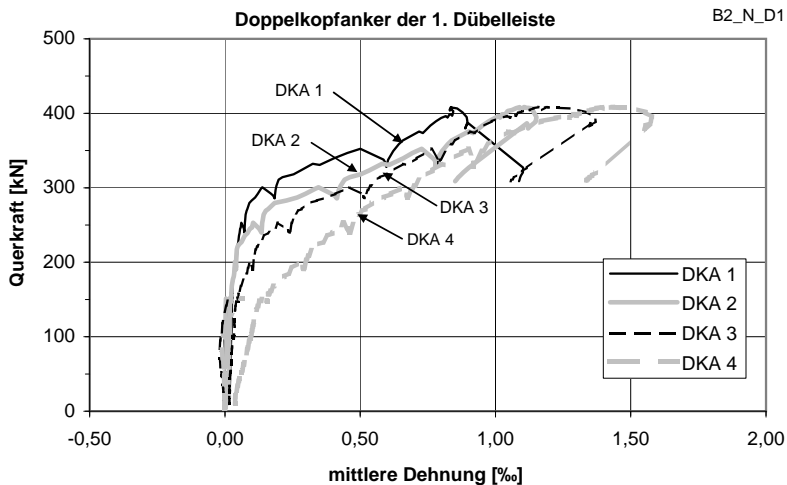
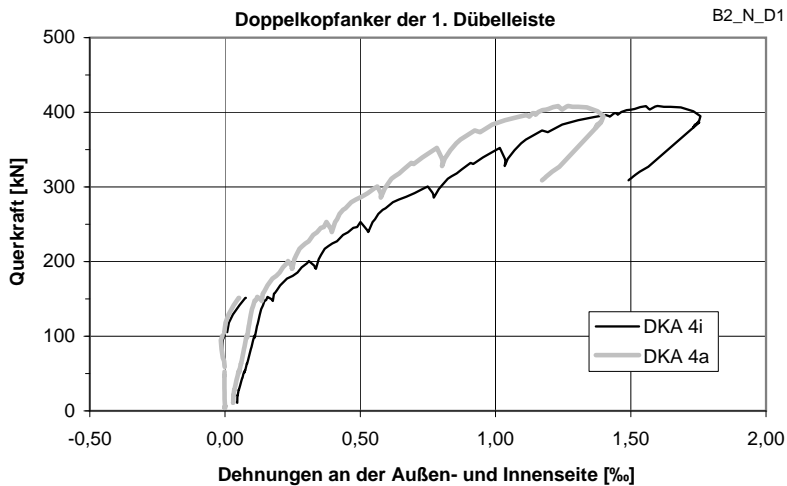
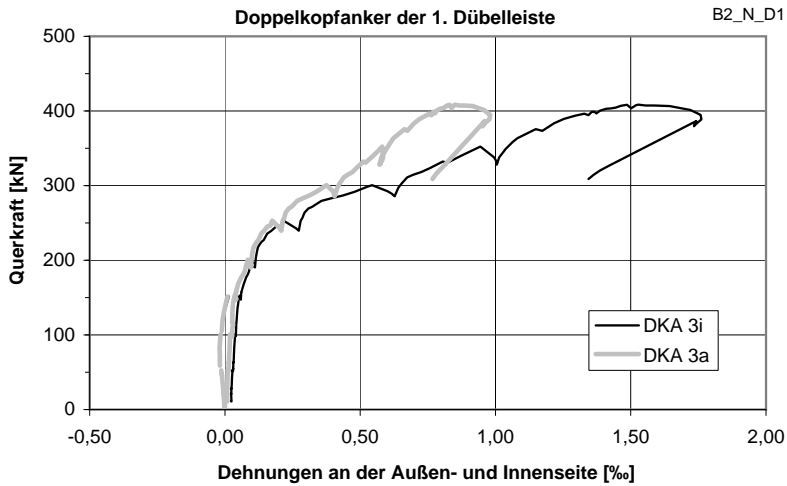


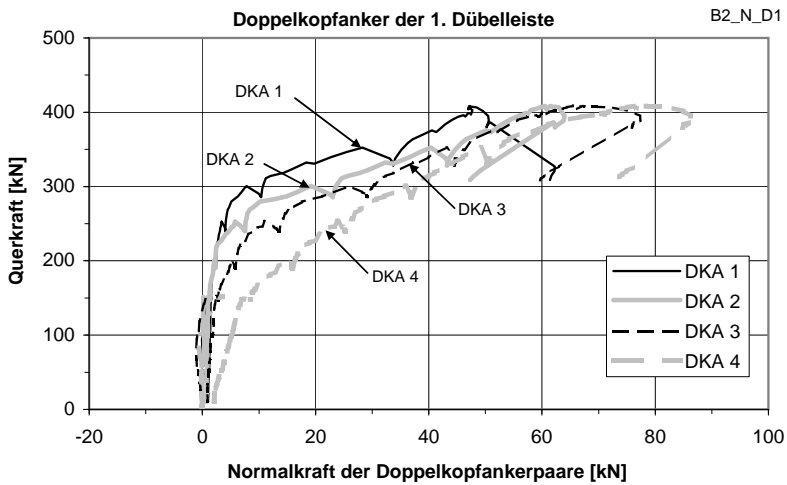
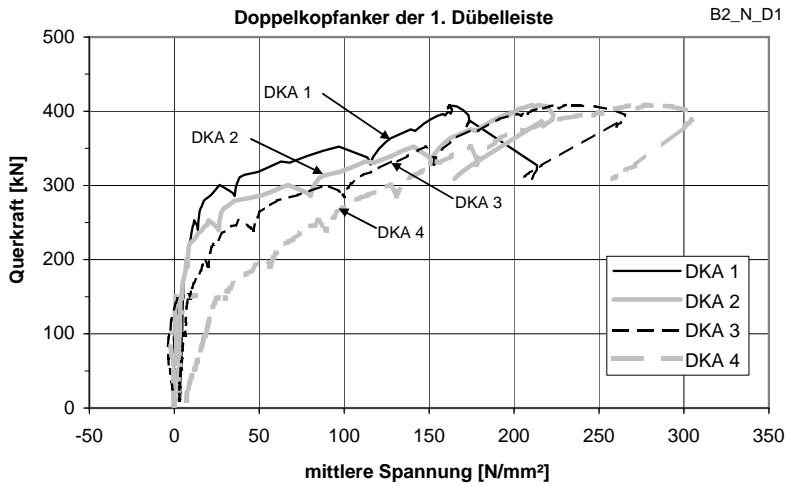




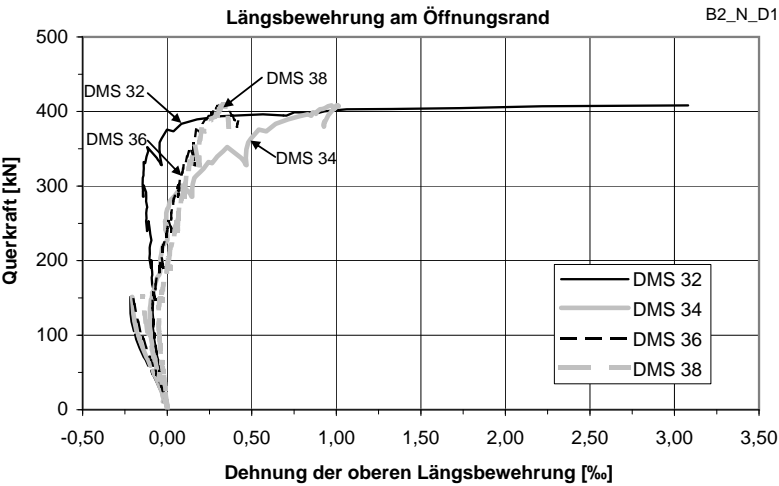
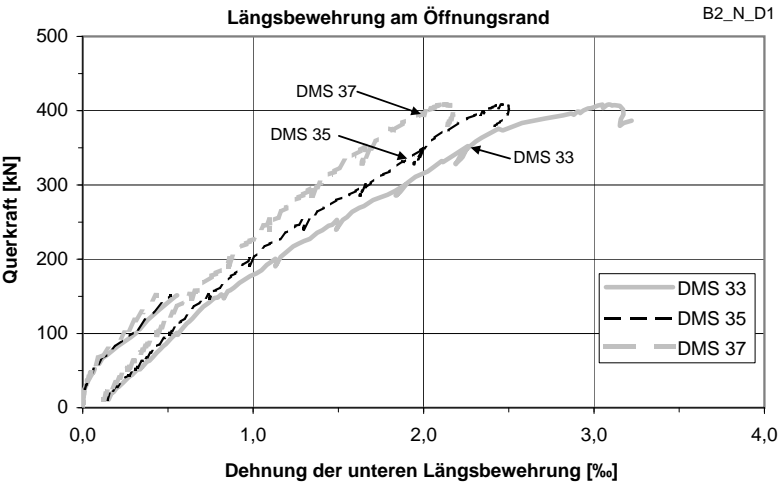
B.15.4. Doppelkopfanker

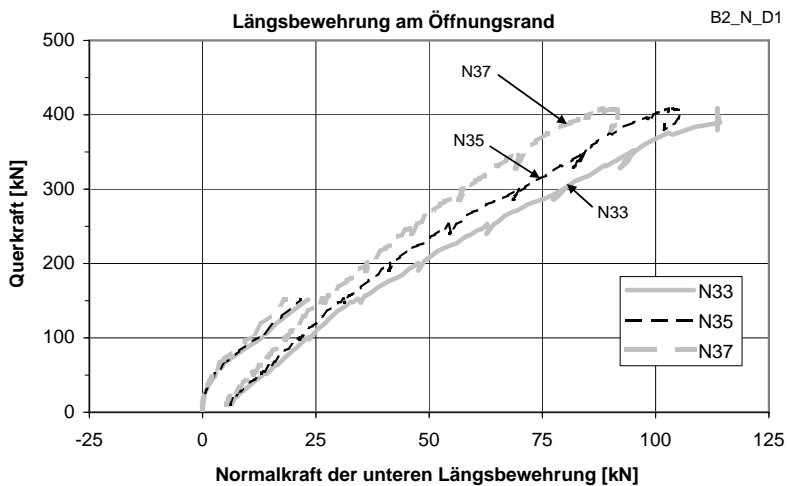
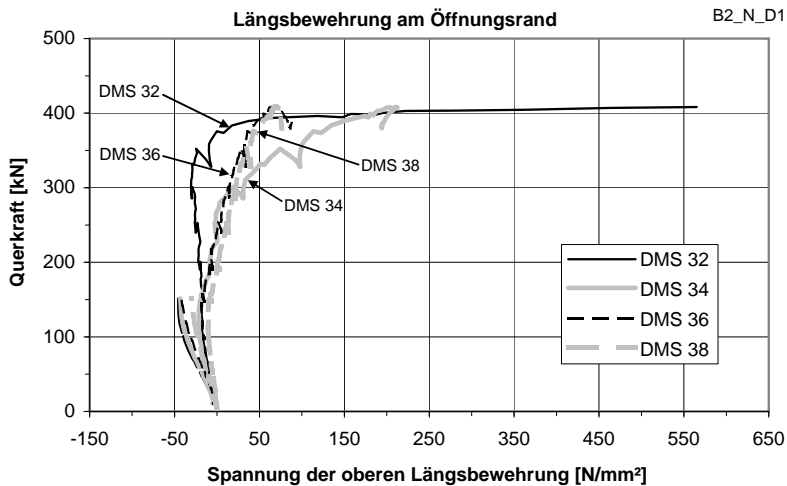
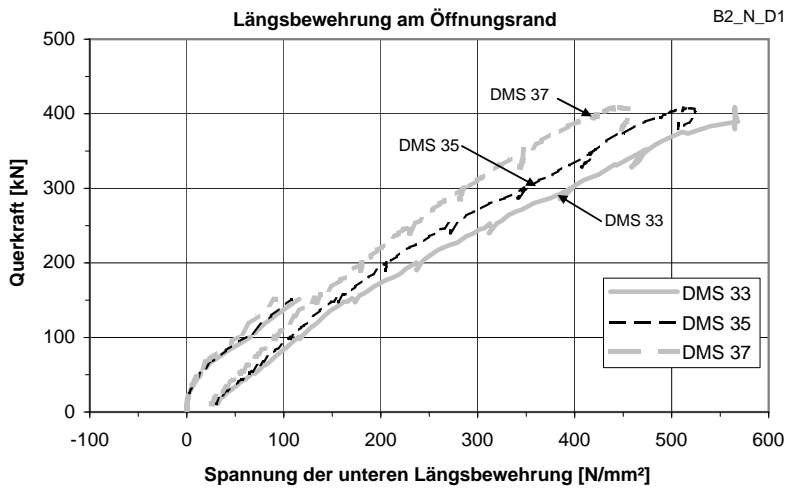


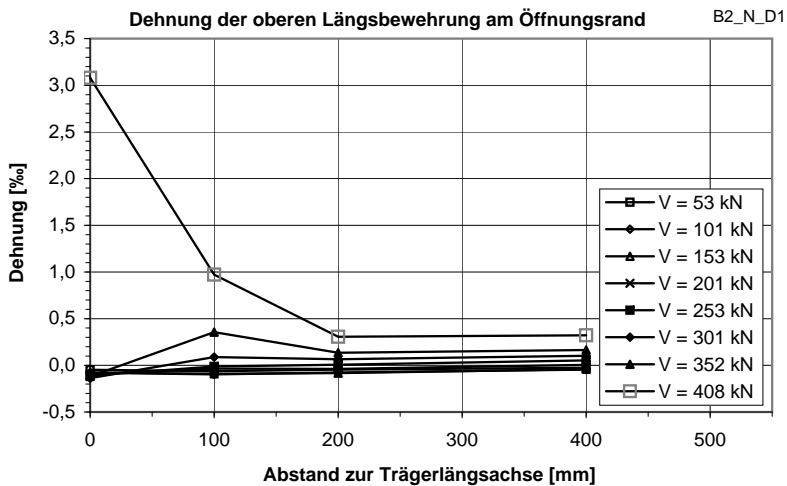
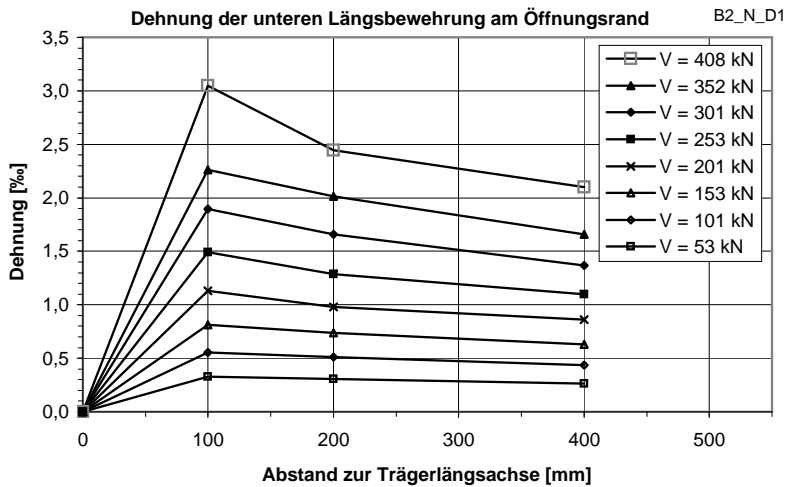
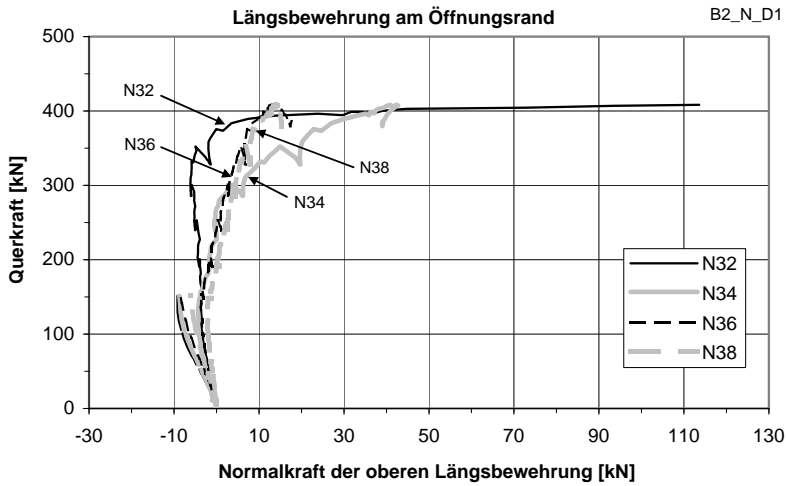


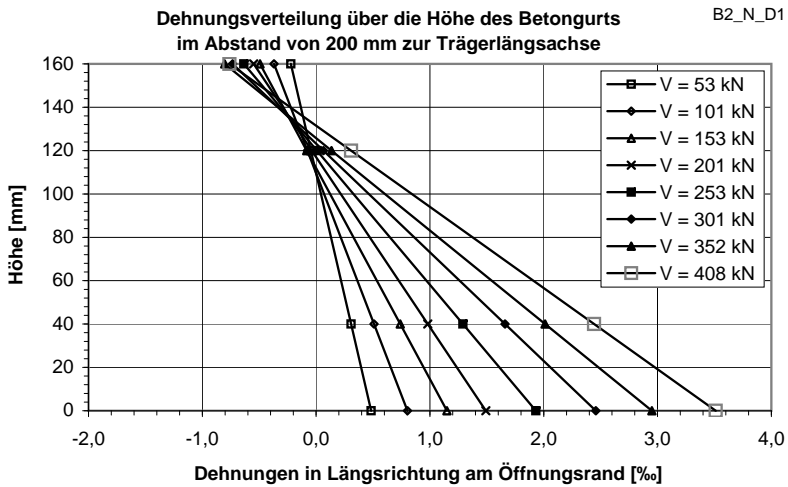
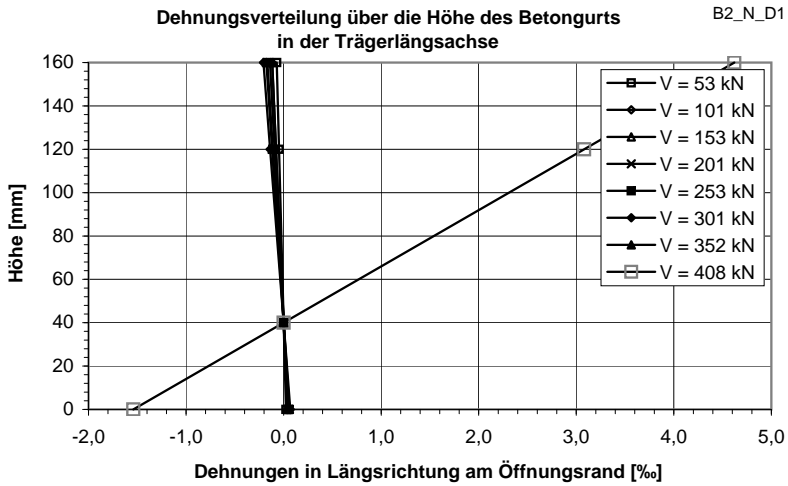


B.15.5. Längsbewehrung

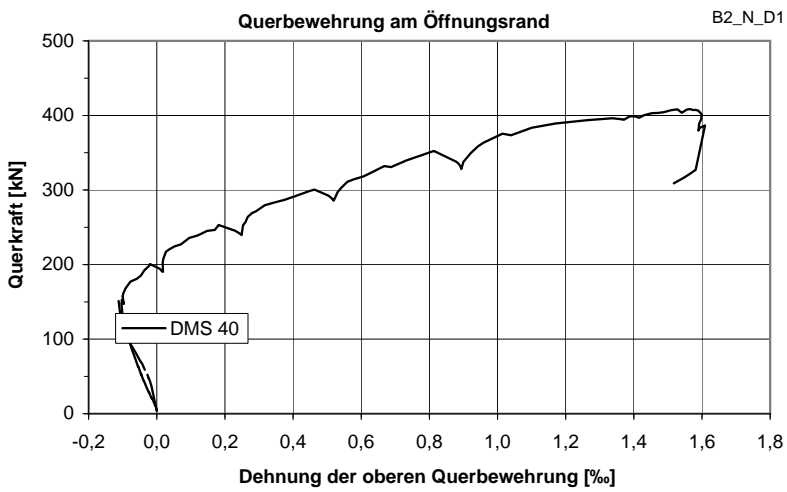
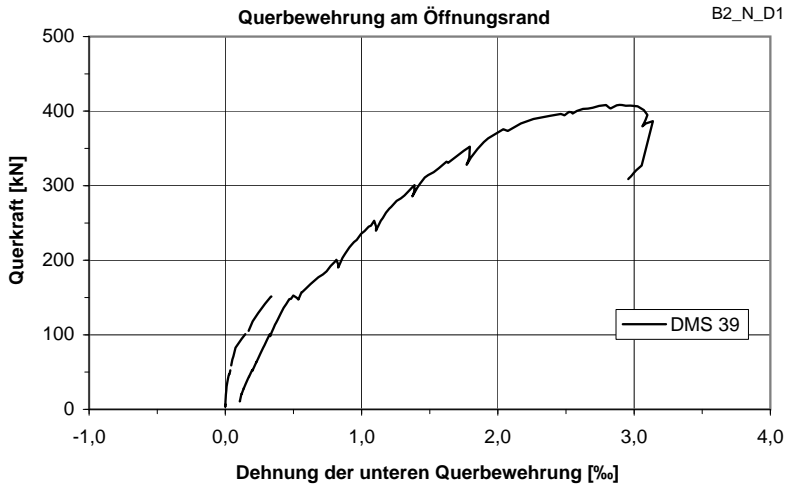


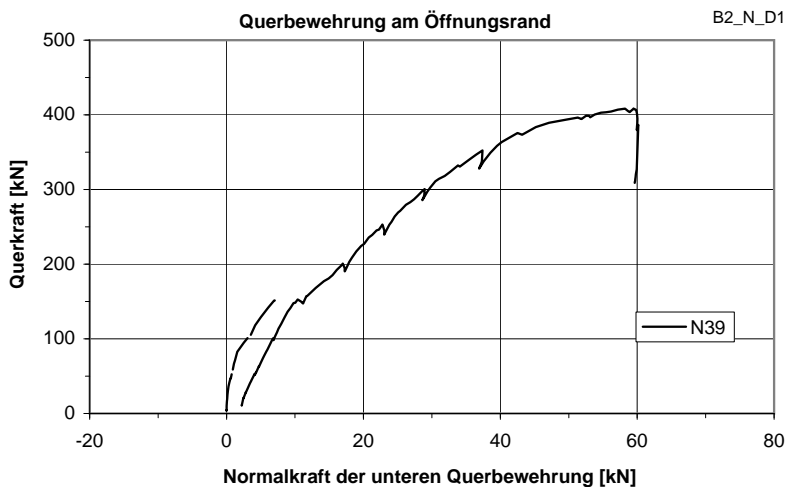
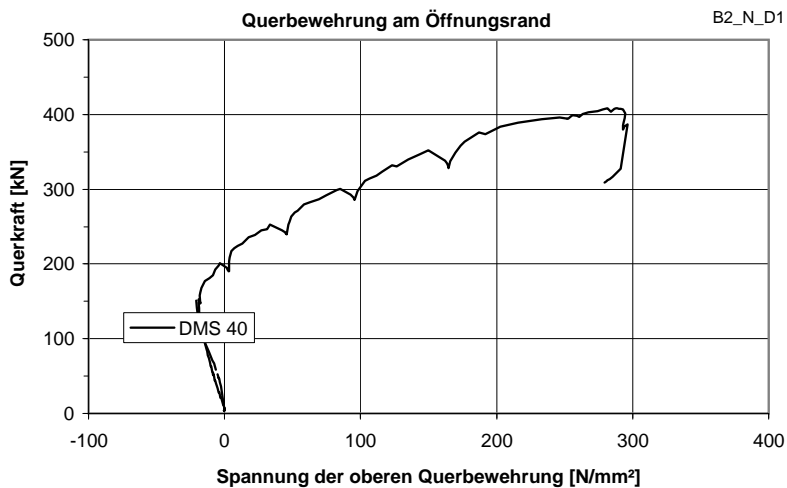
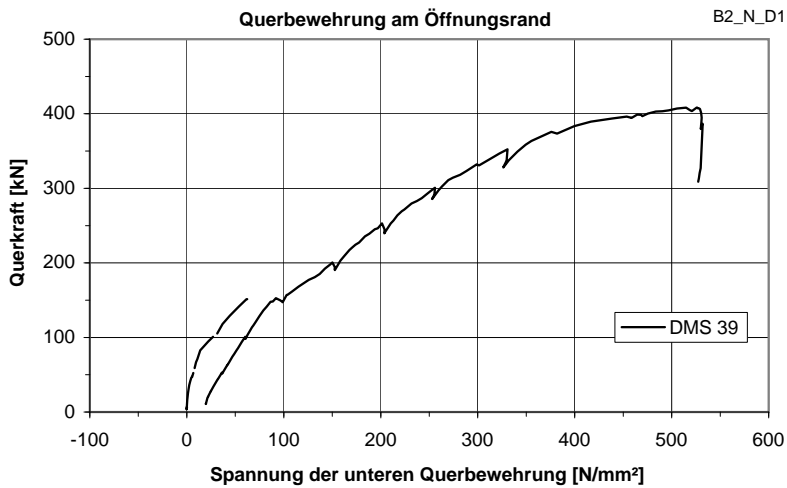


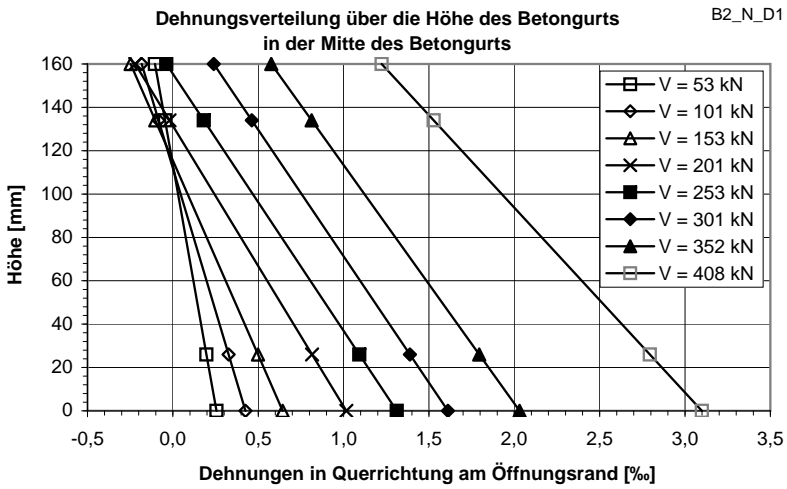
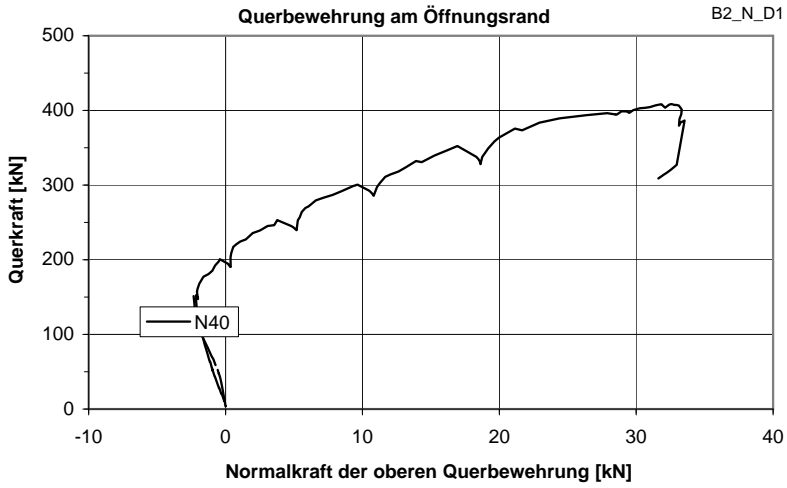




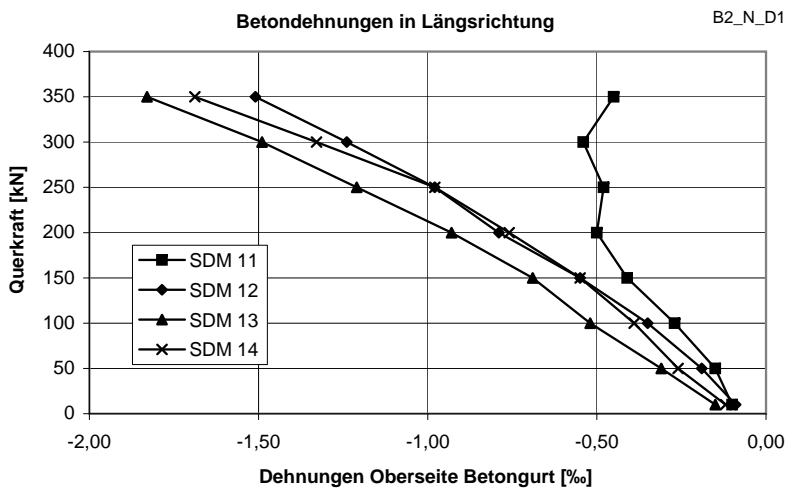
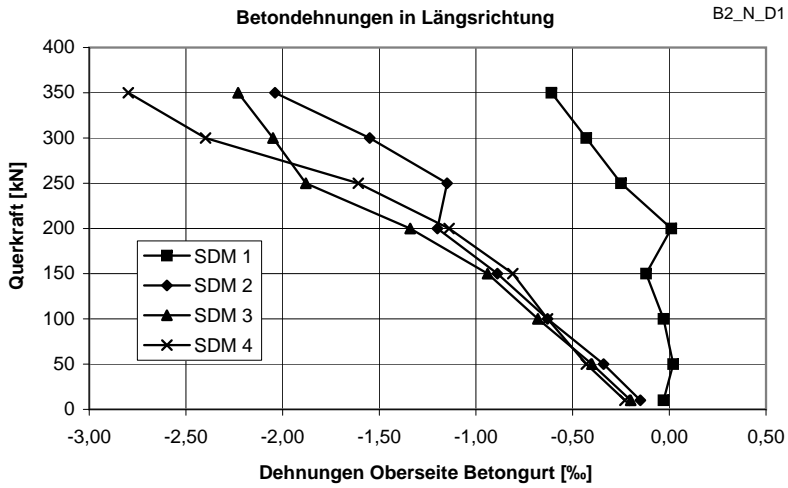
B.15.6. Querbewehrung

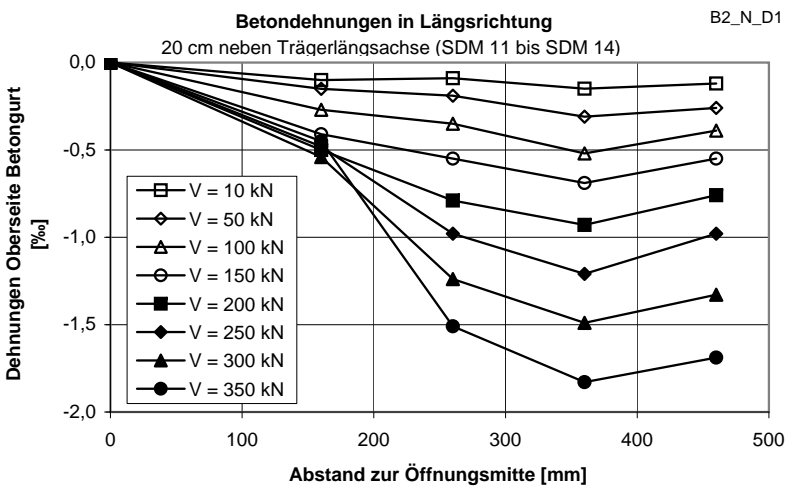
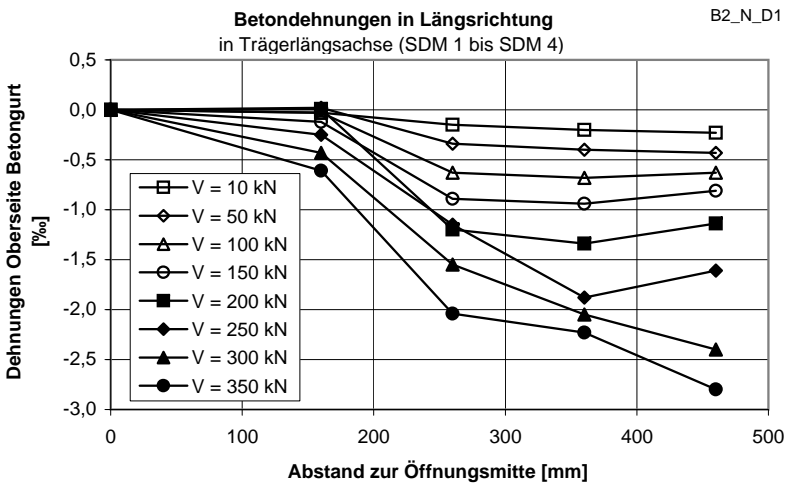
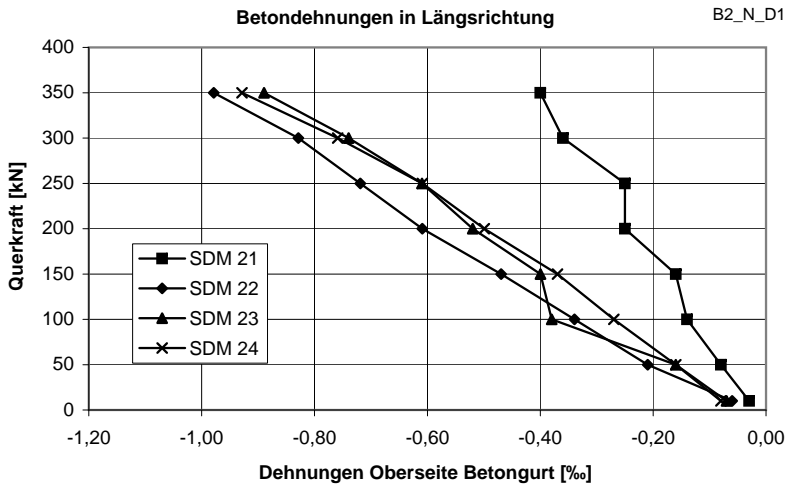


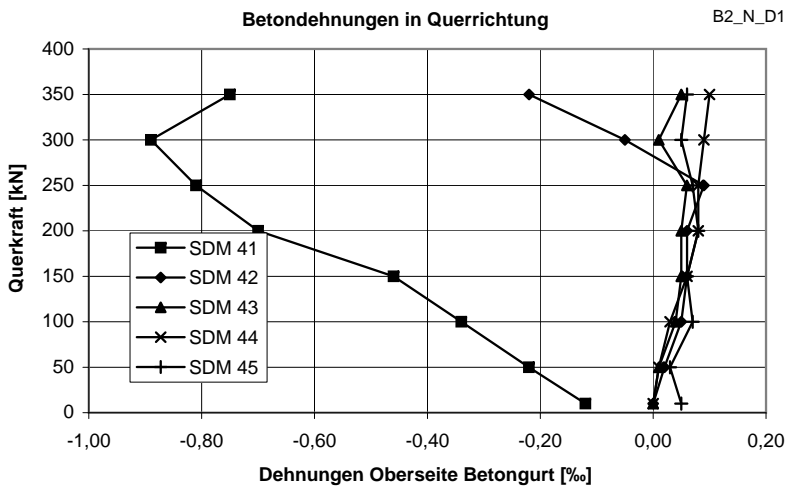
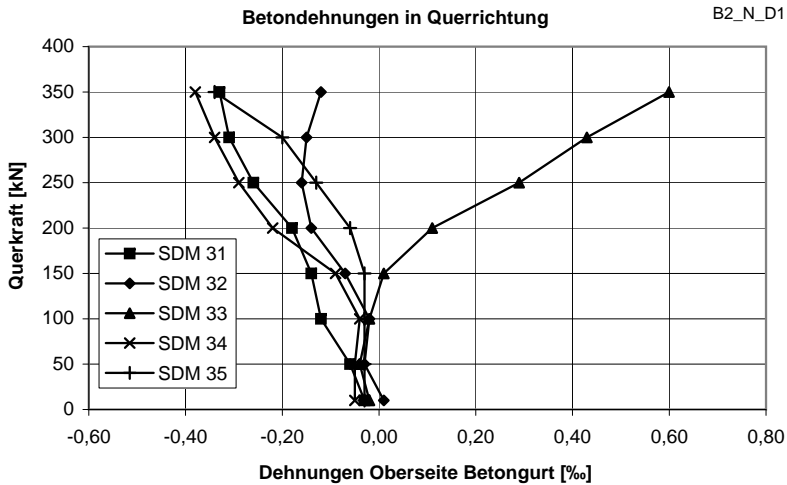
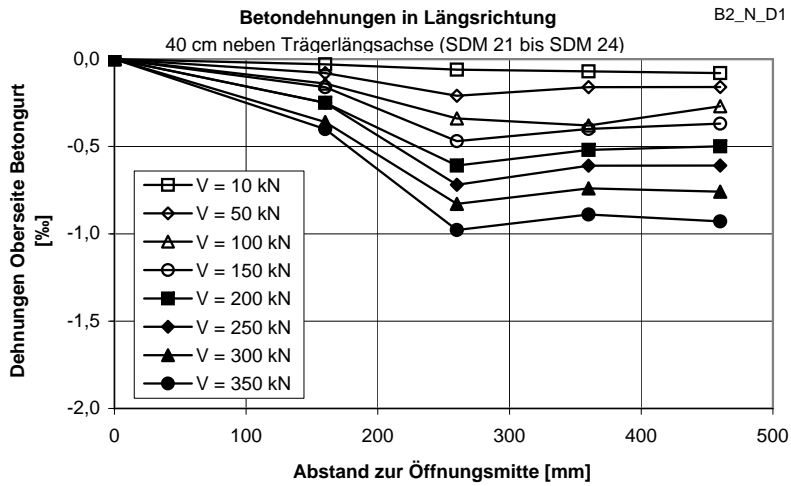


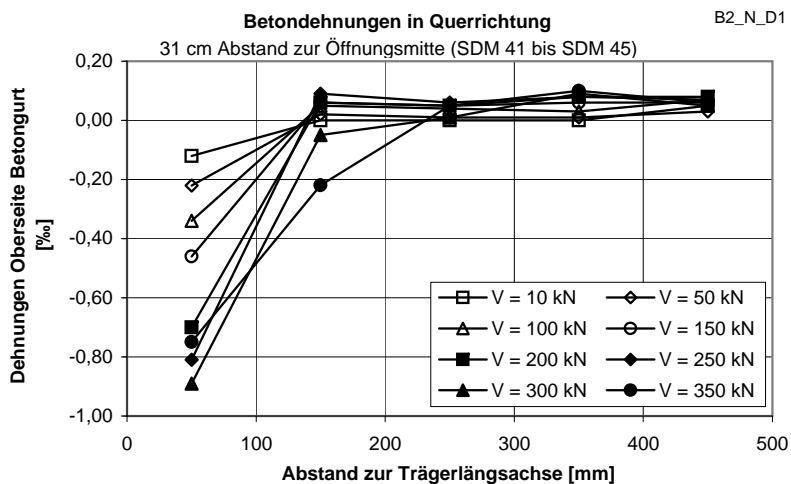
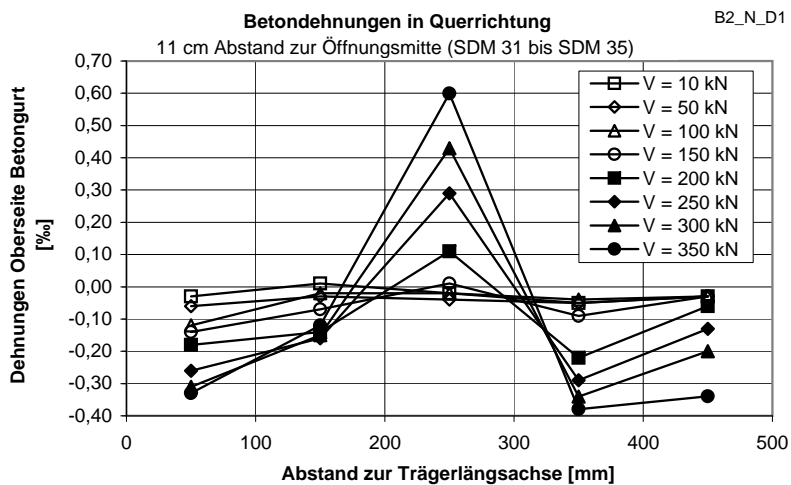
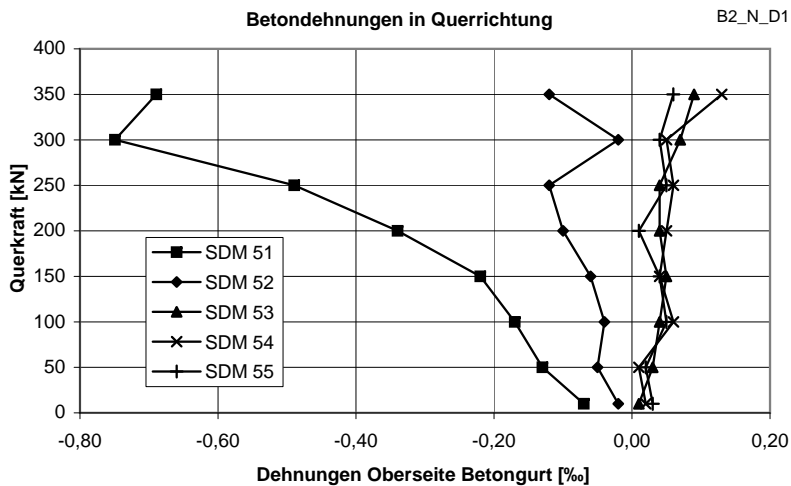


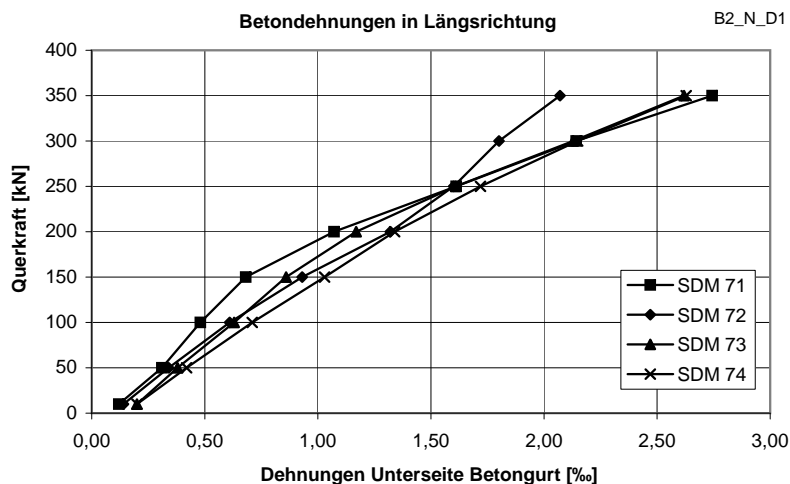
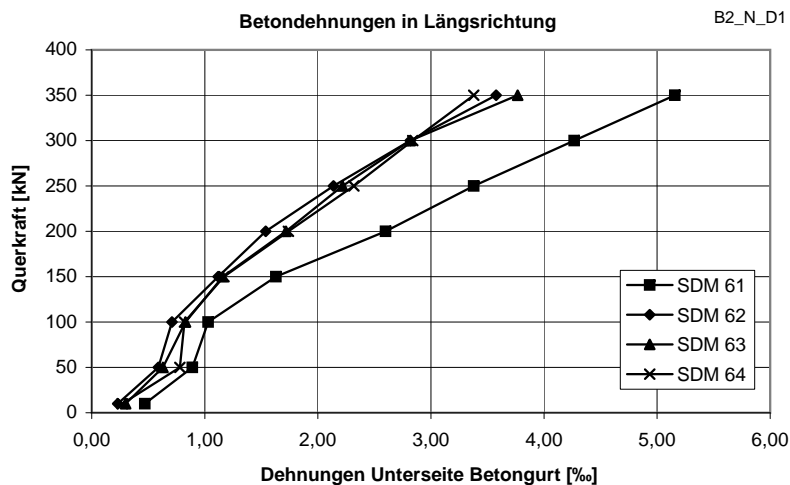
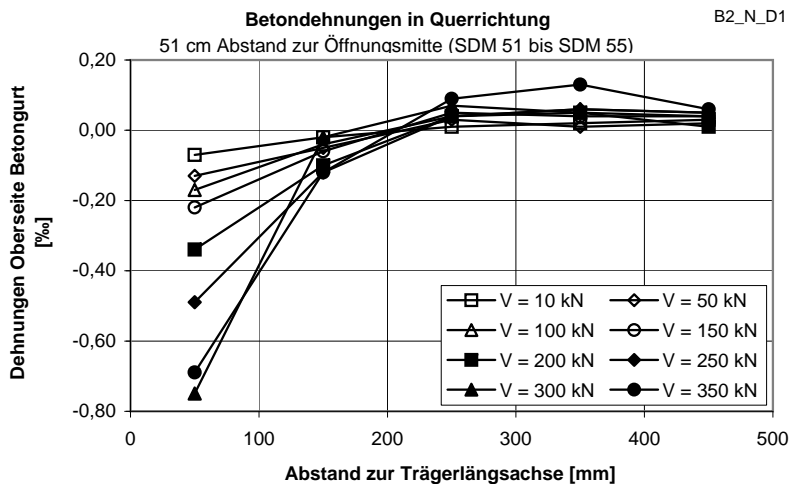
B.15.7. Betondehnungen

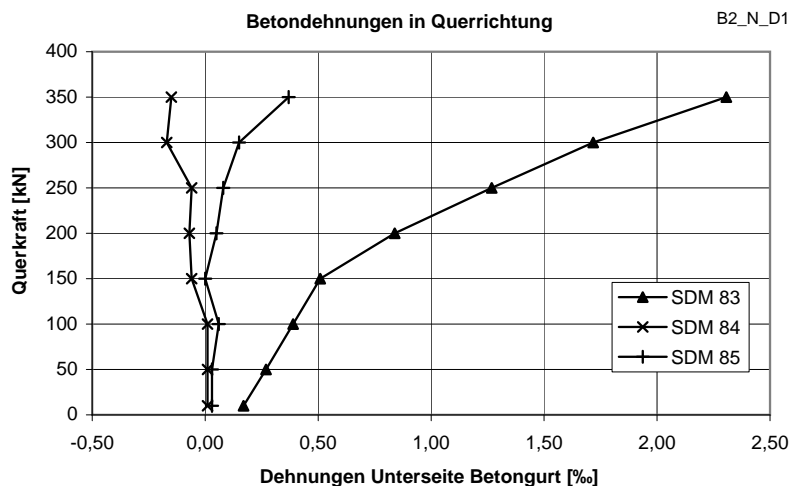
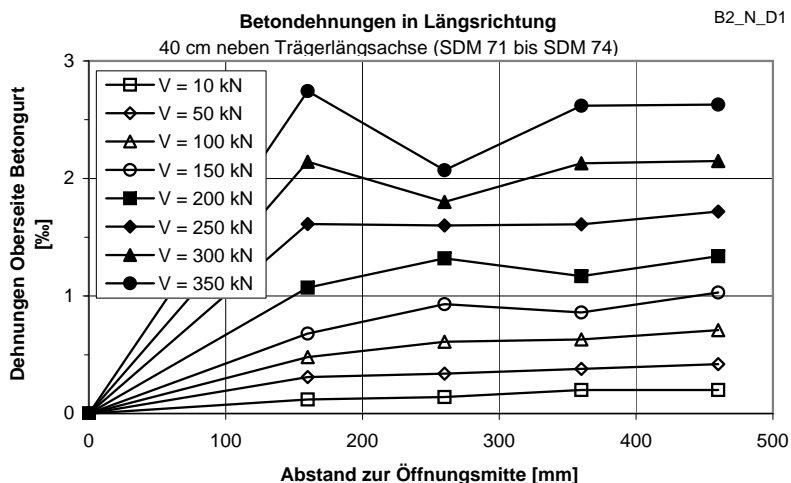
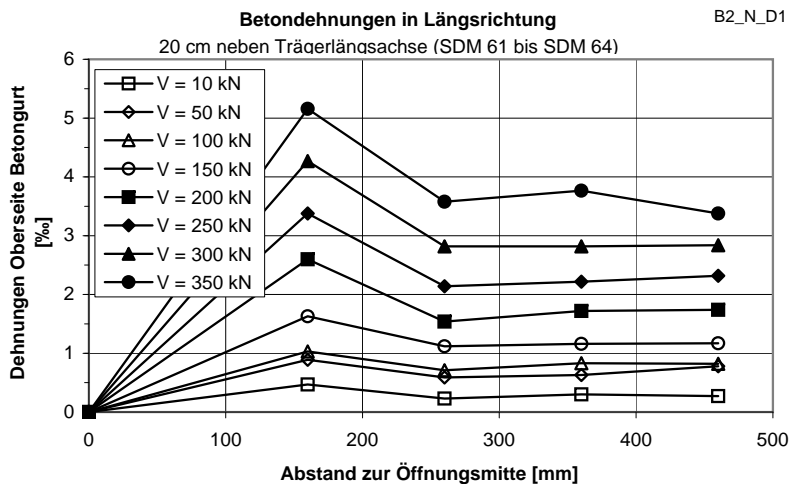


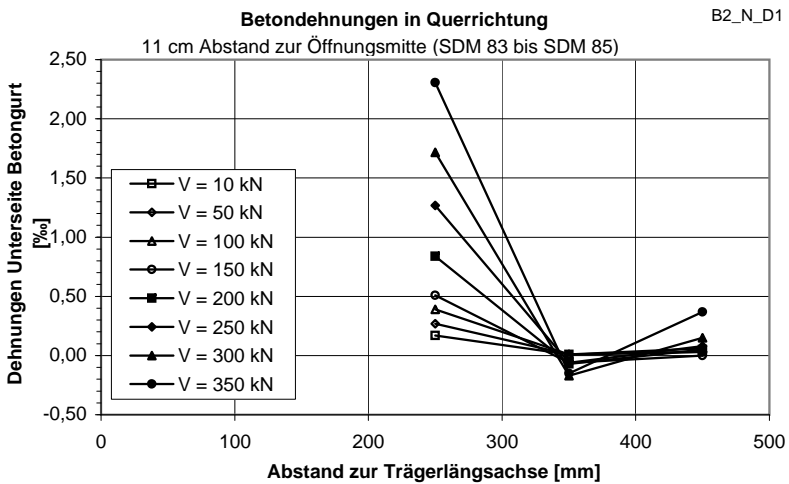
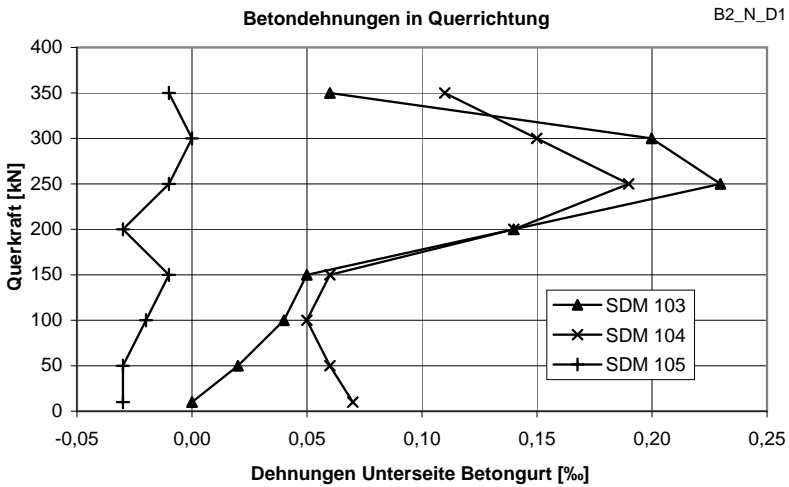
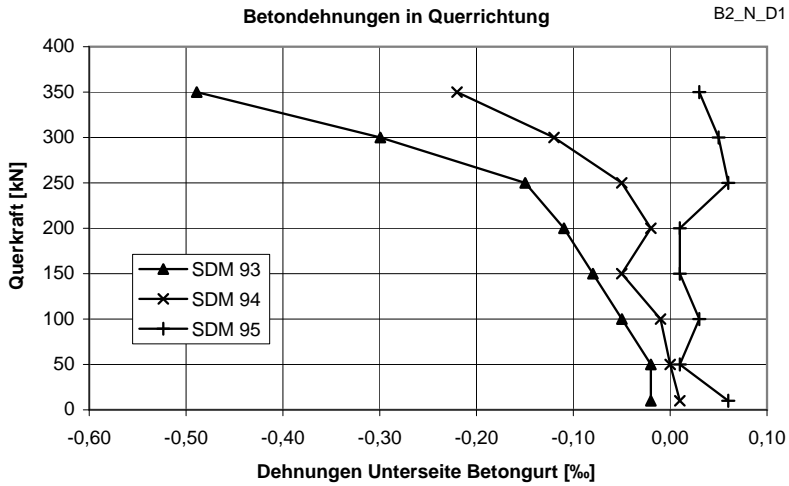


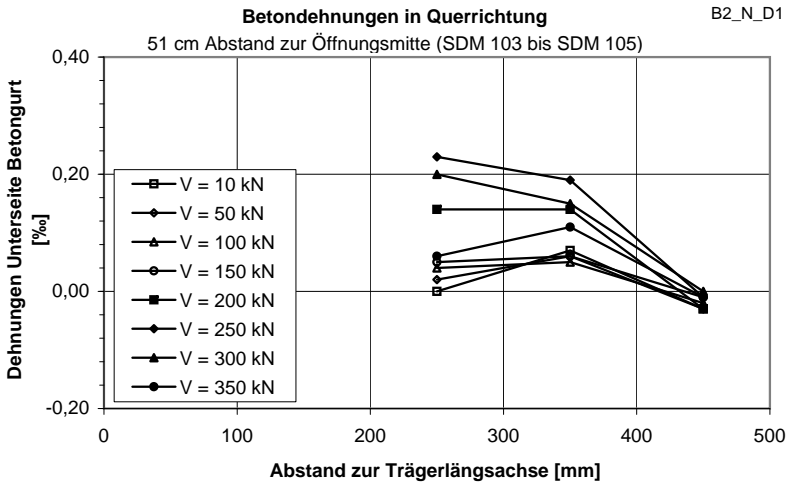
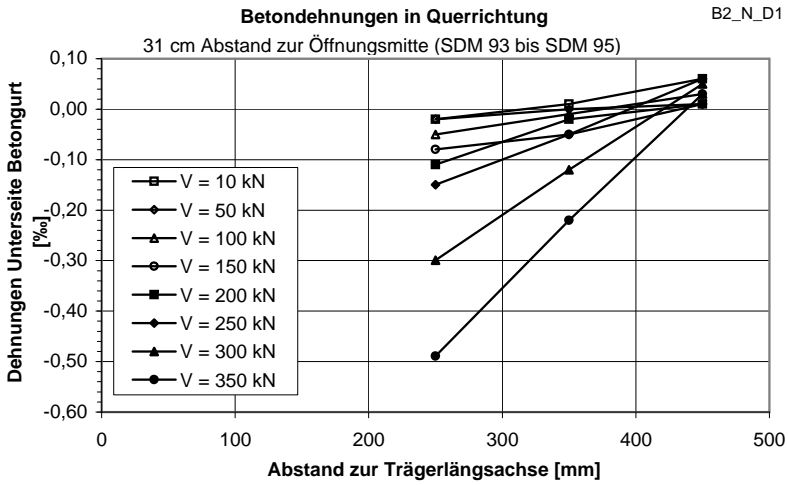






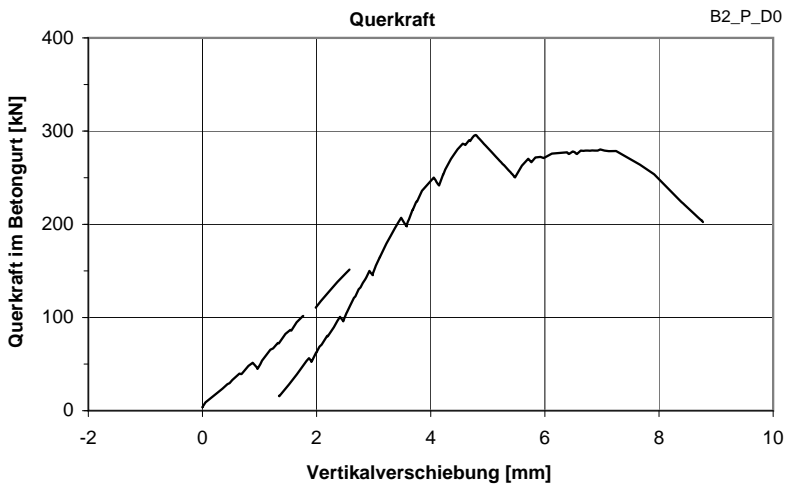
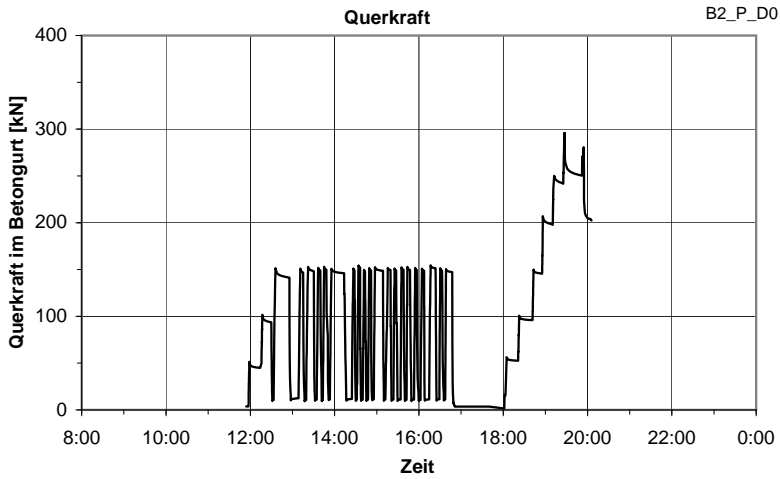




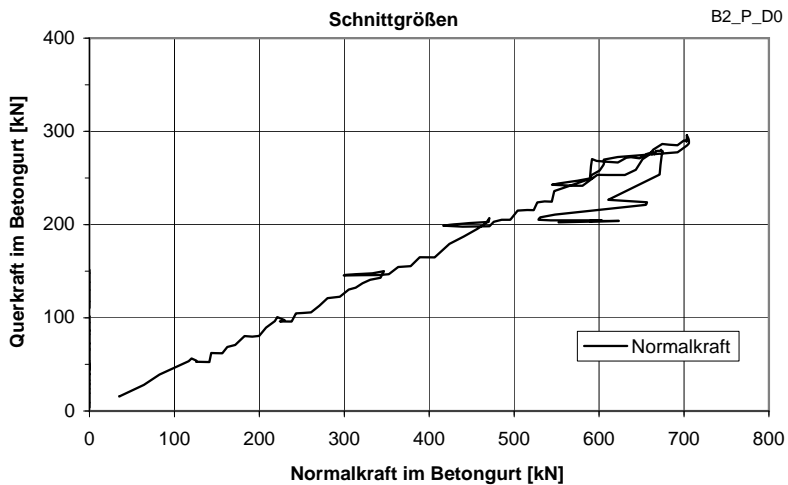
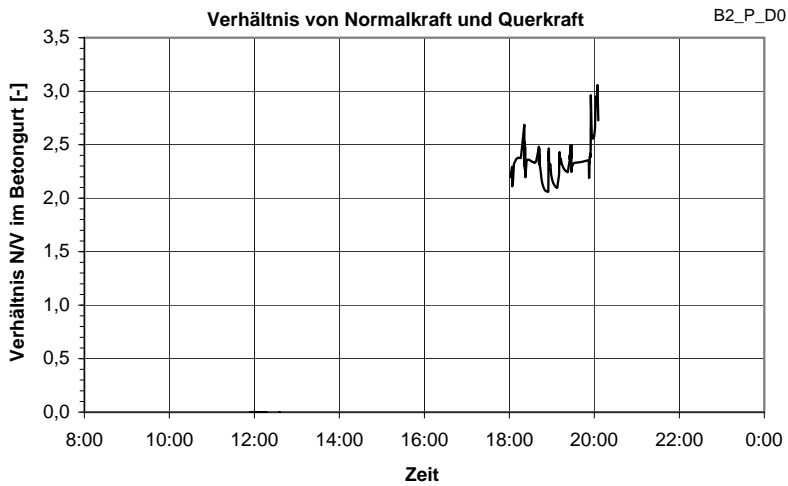
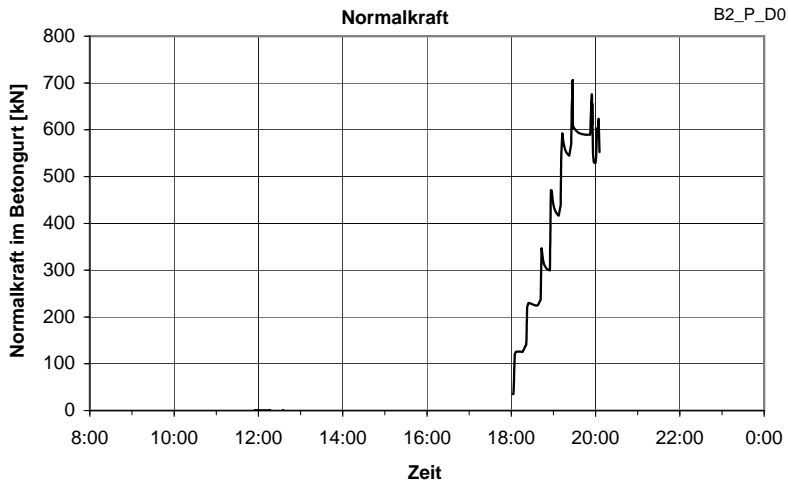


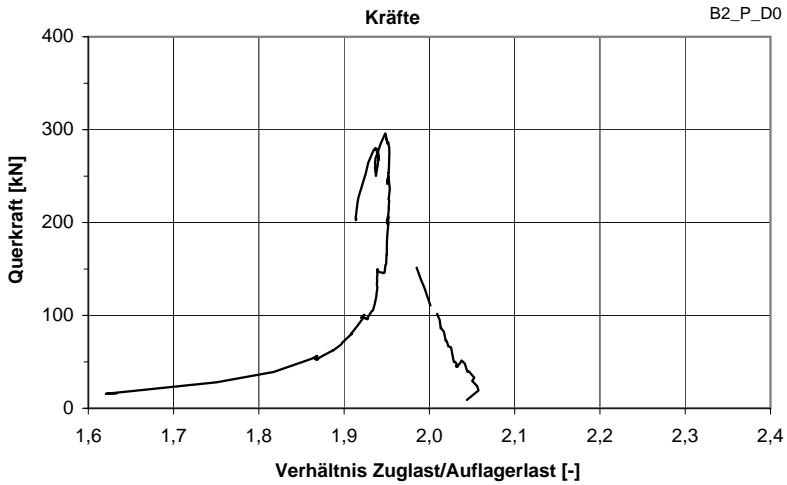
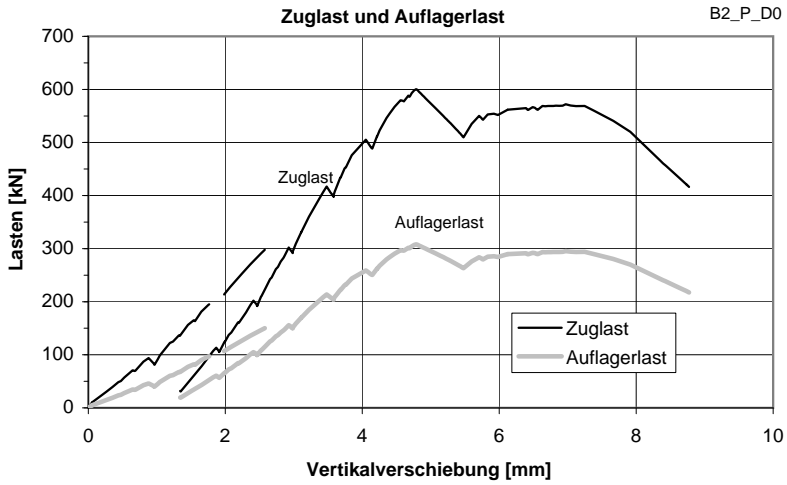
B.16. Versuch B2_P_D0

B.16.1. Kräfte

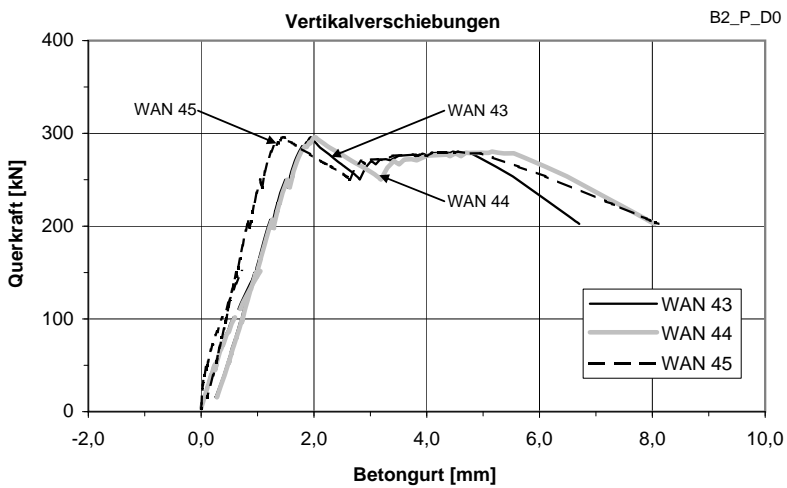
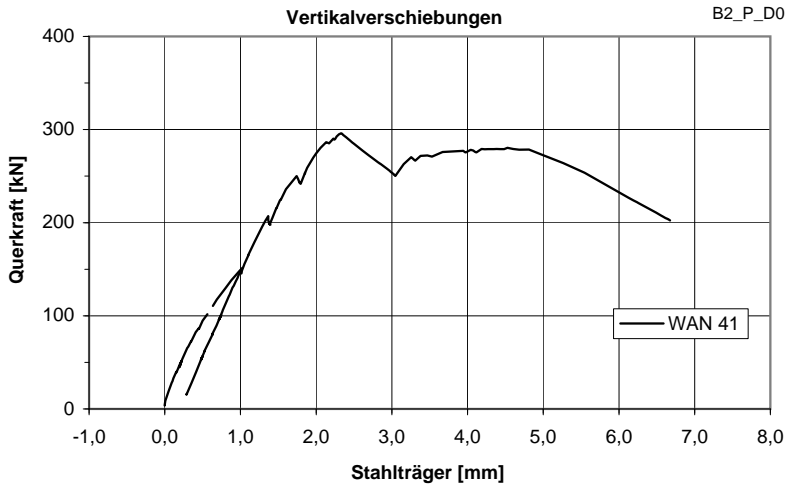


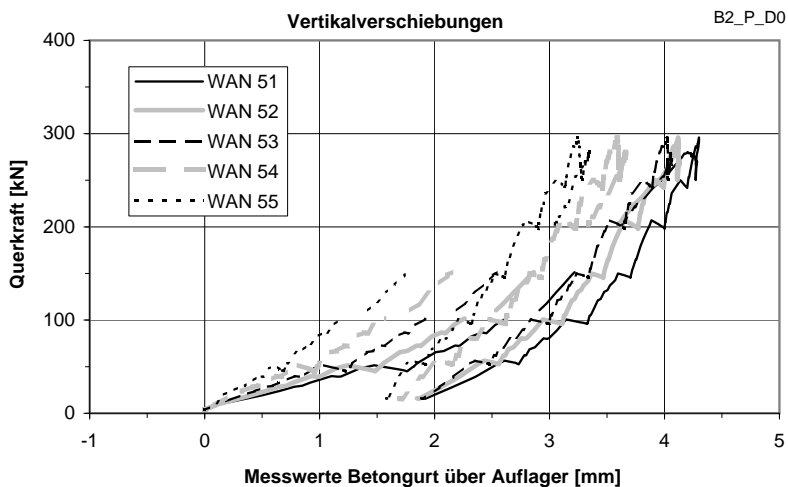
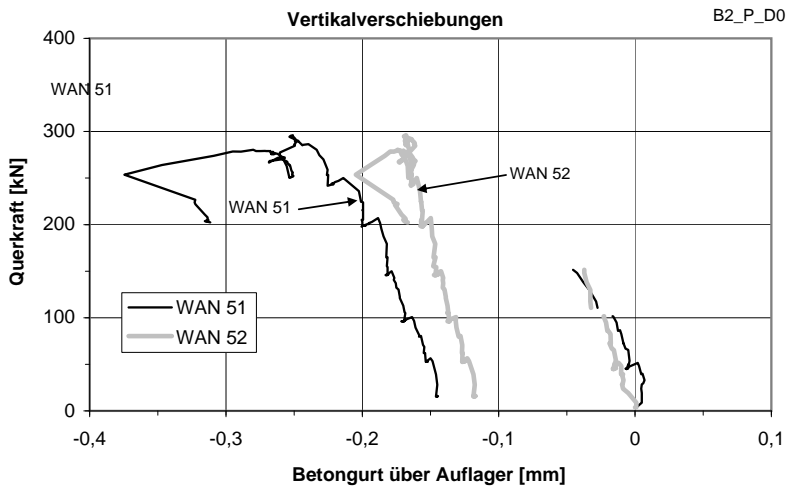
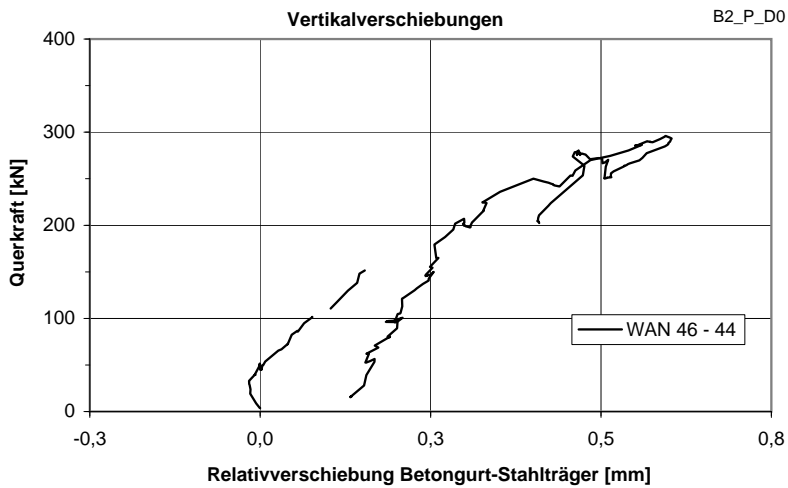
B. Diagramme der Versuchsmesswerte



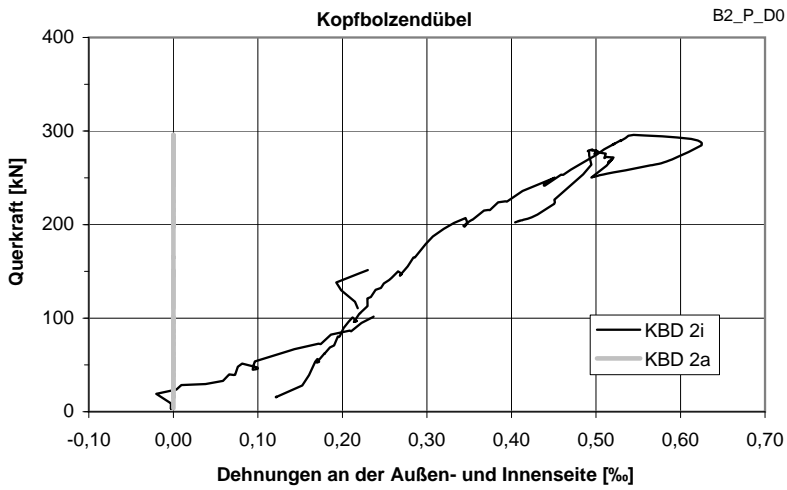
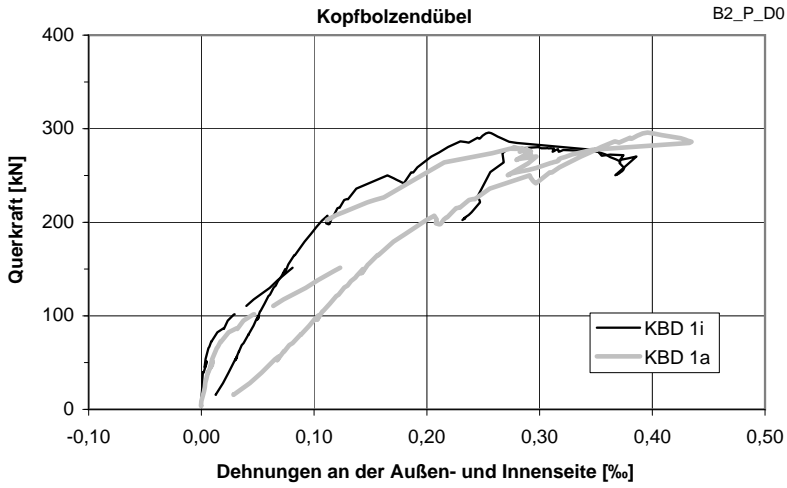


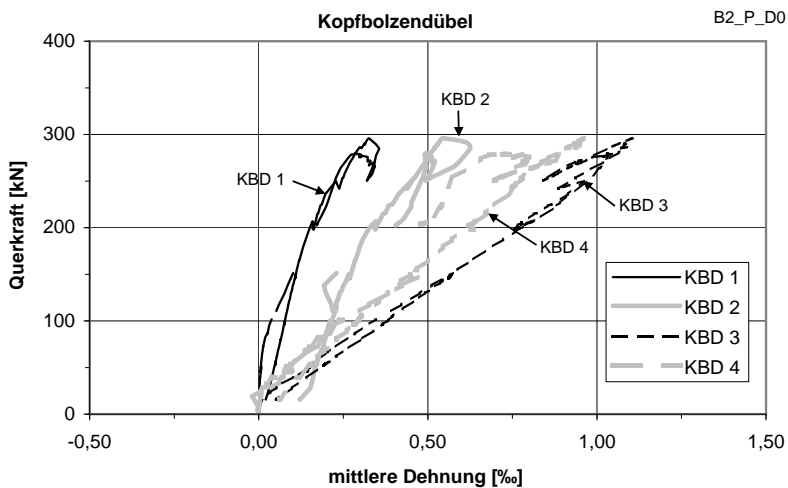
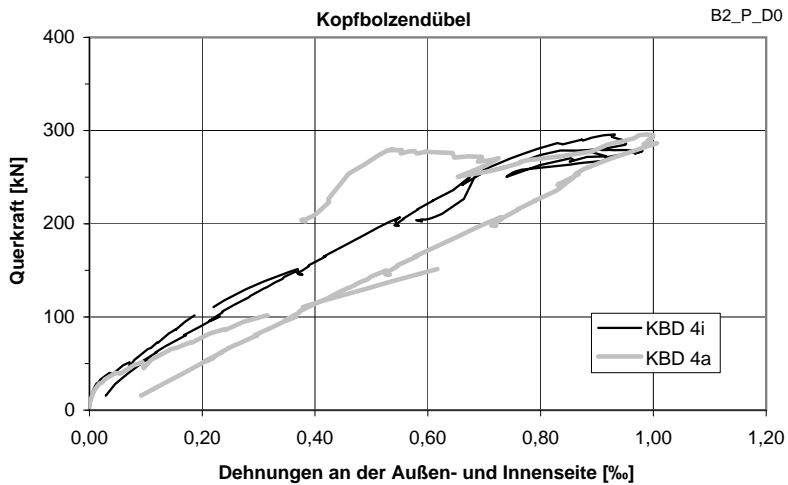
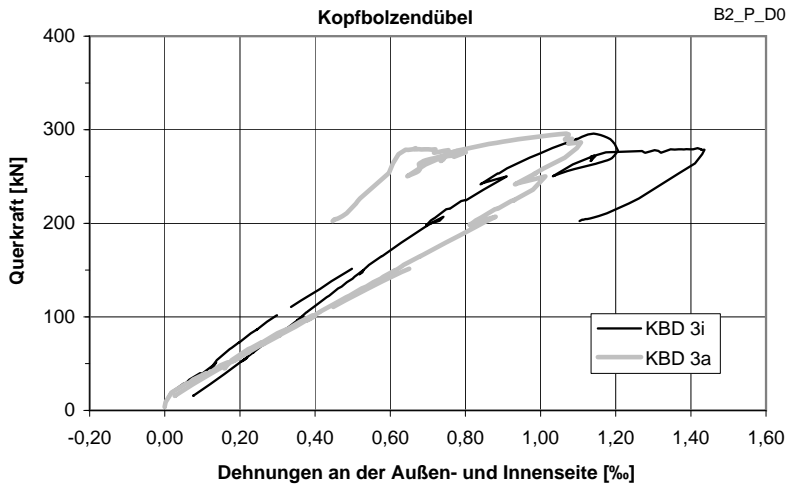
B.16.2. Verformungen

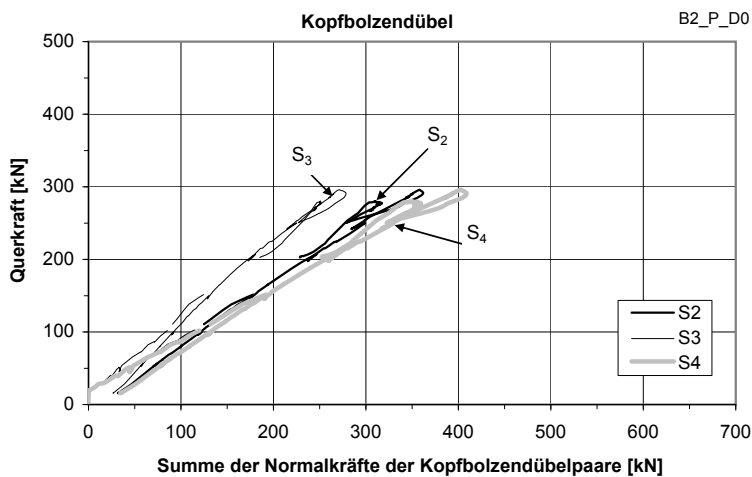
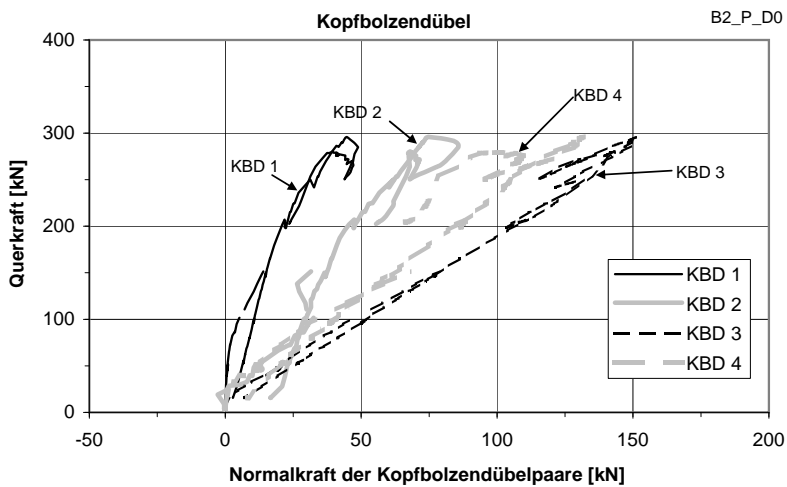
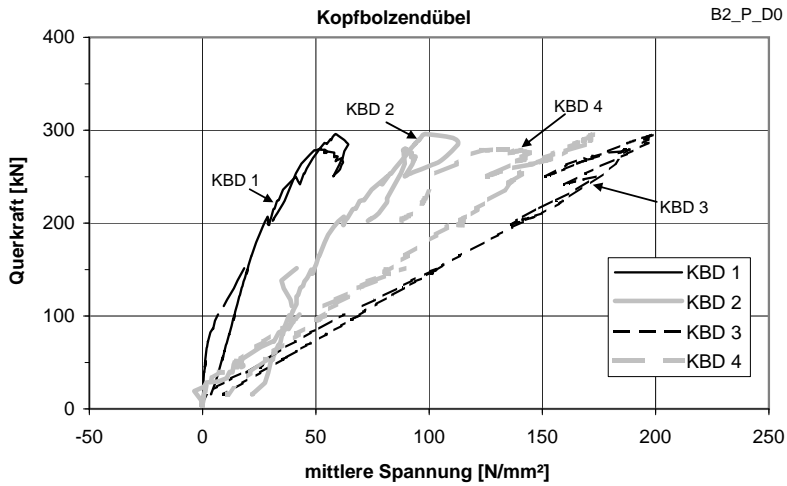




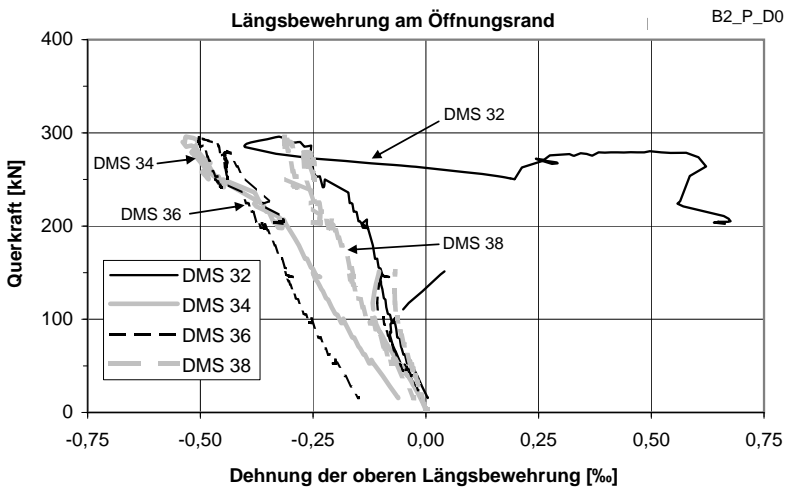
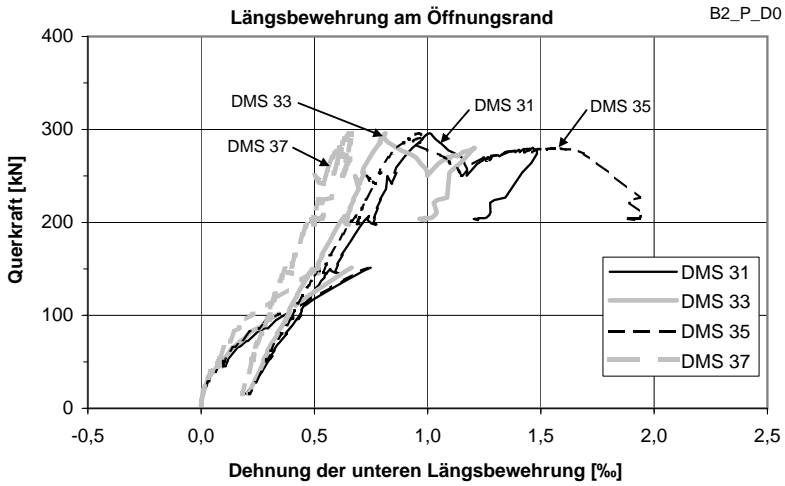
B.16.3. Kopfbolzendübel

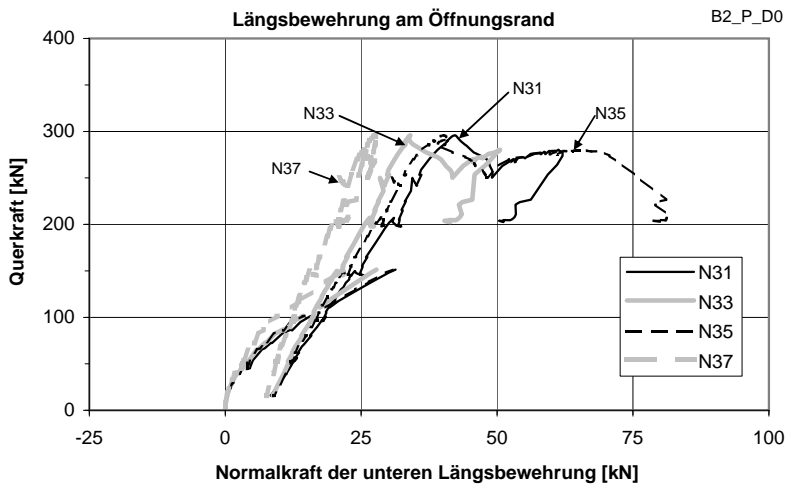
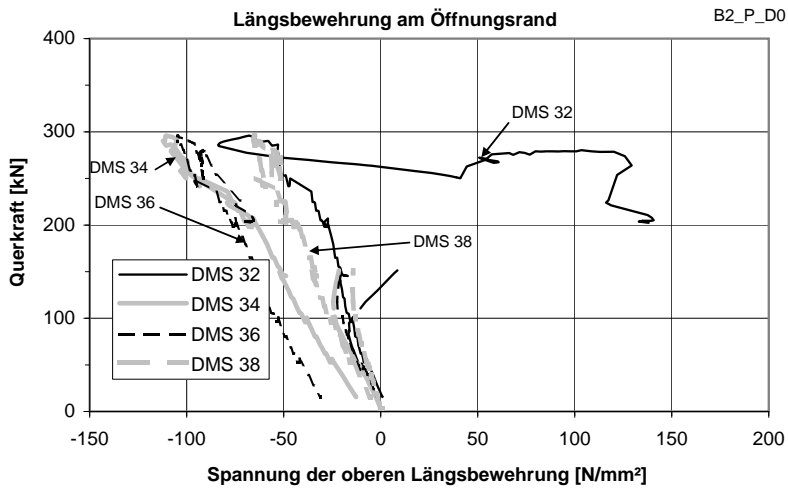
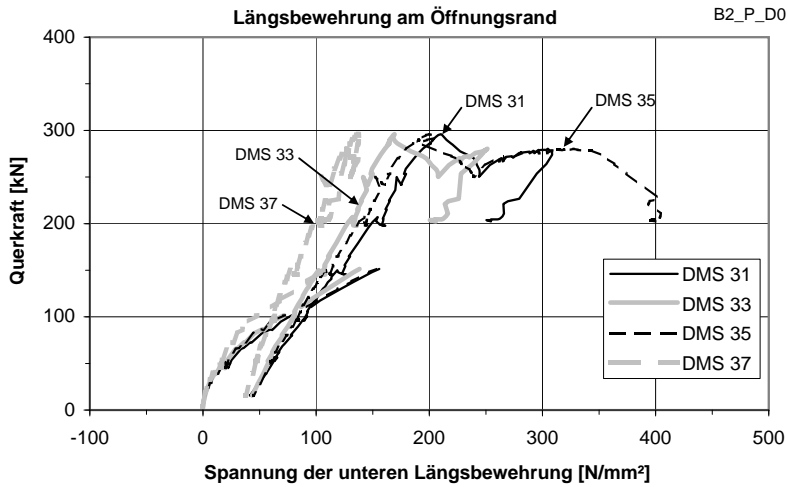


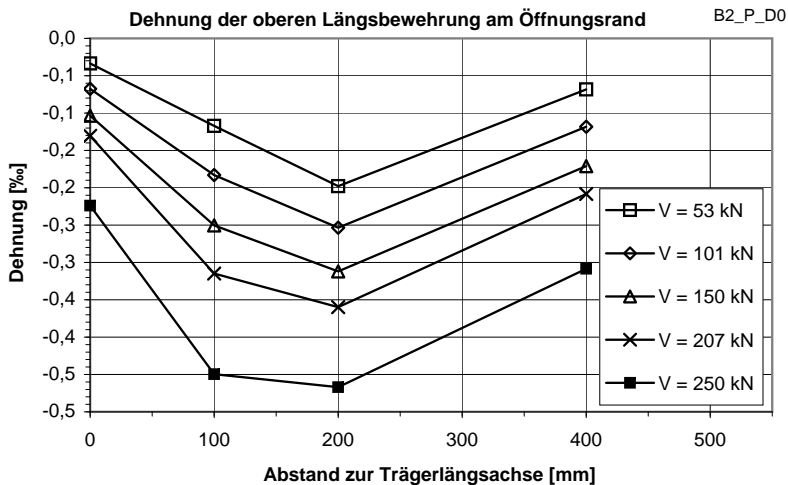
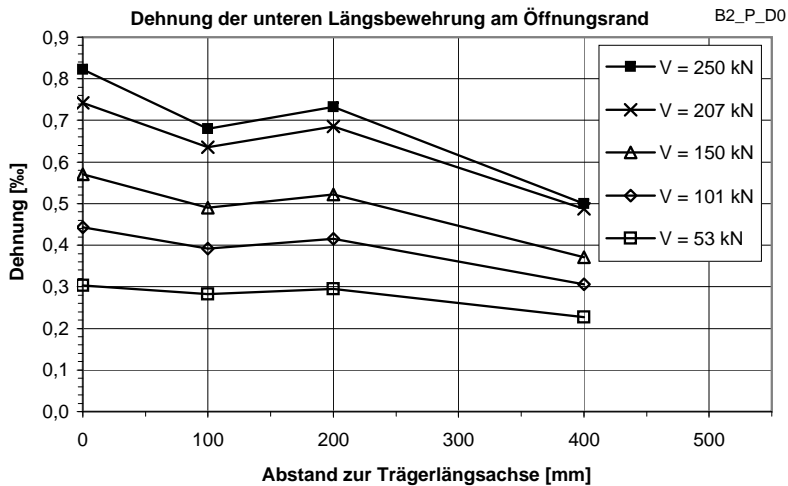
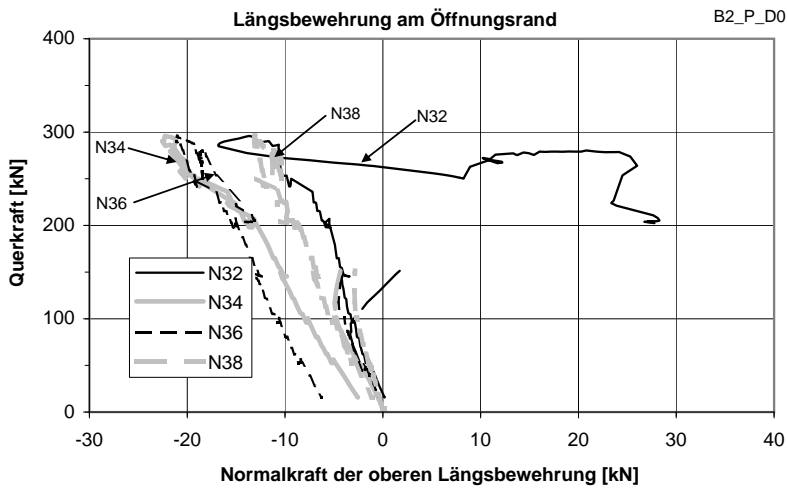


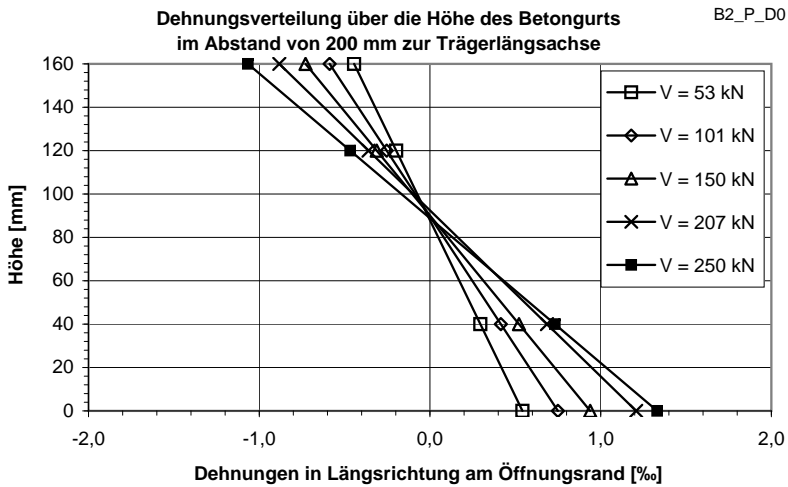
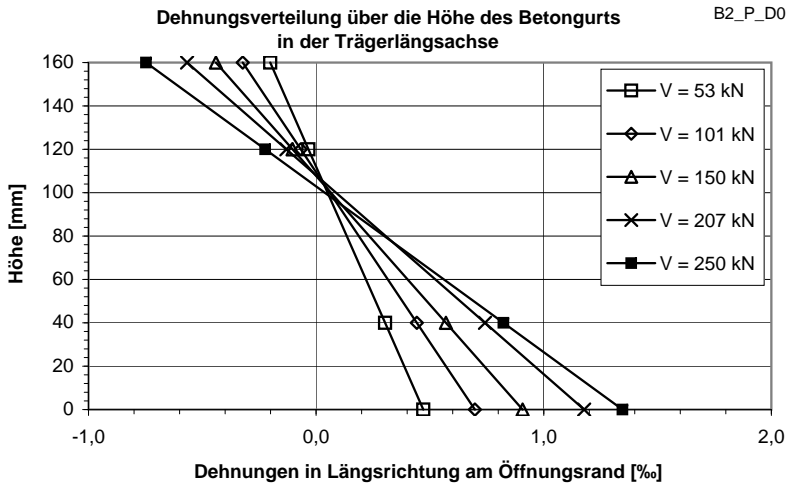


B.16.4. Längsbewehrung

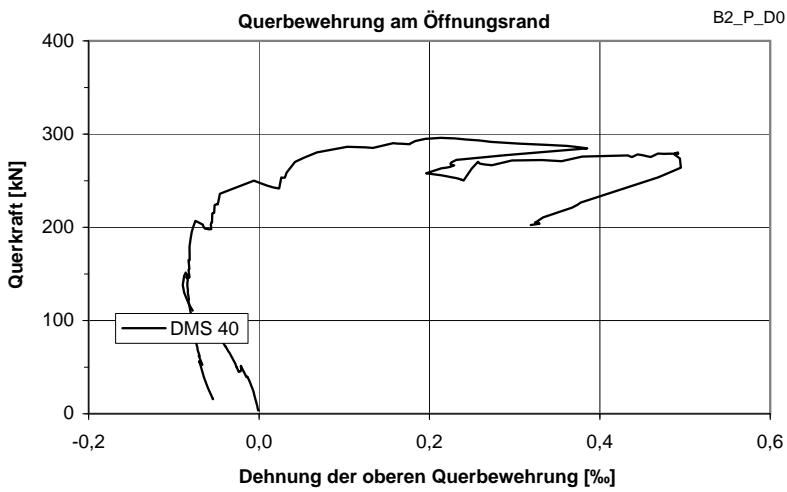
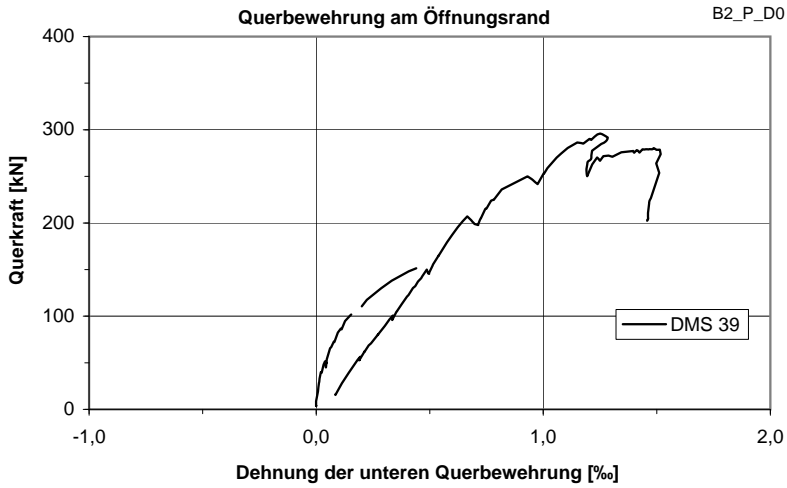


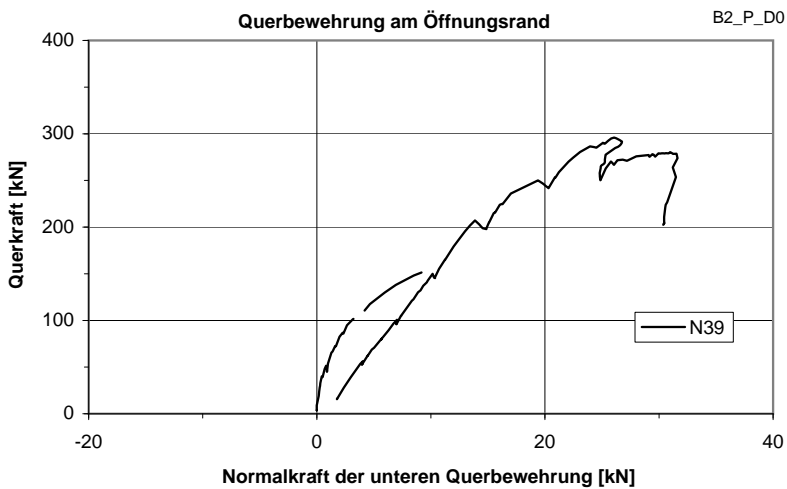
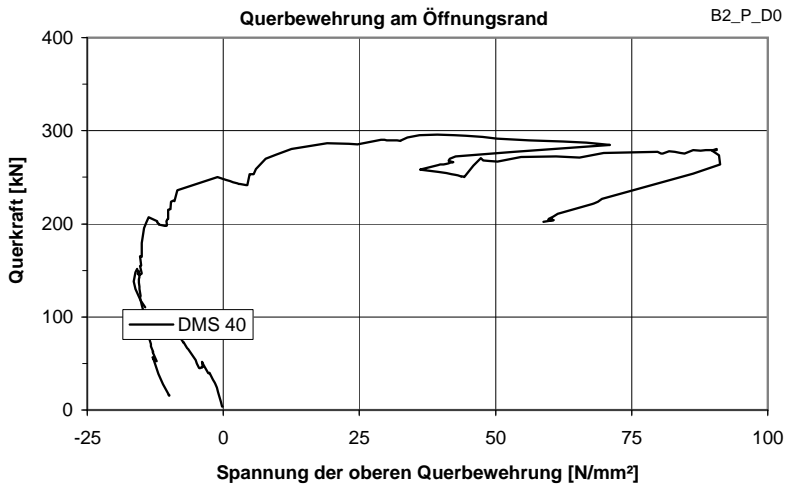
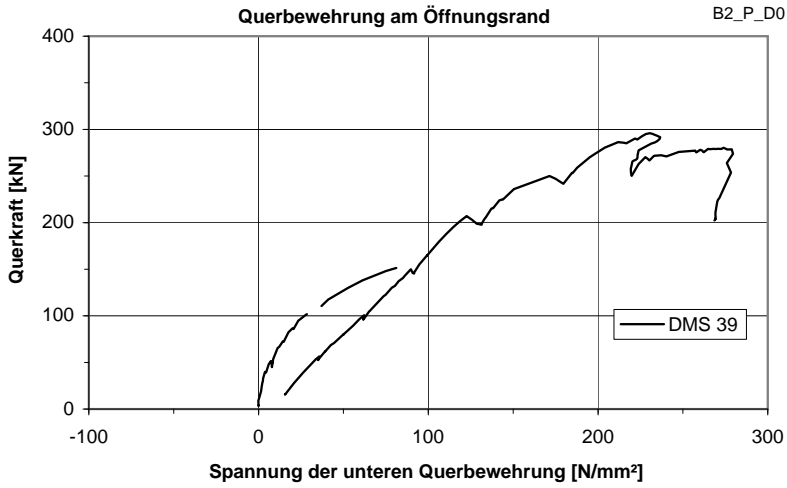


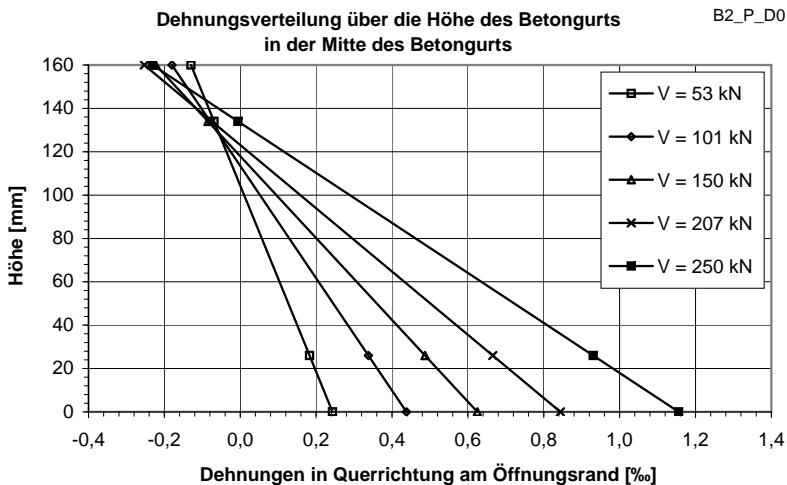
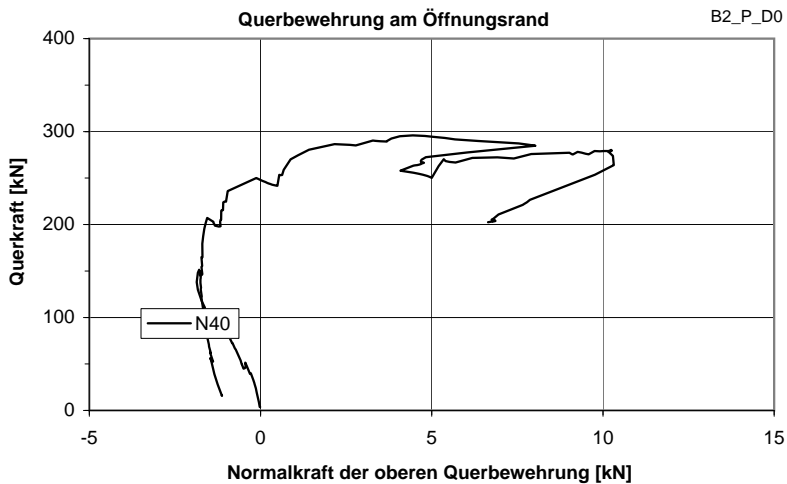




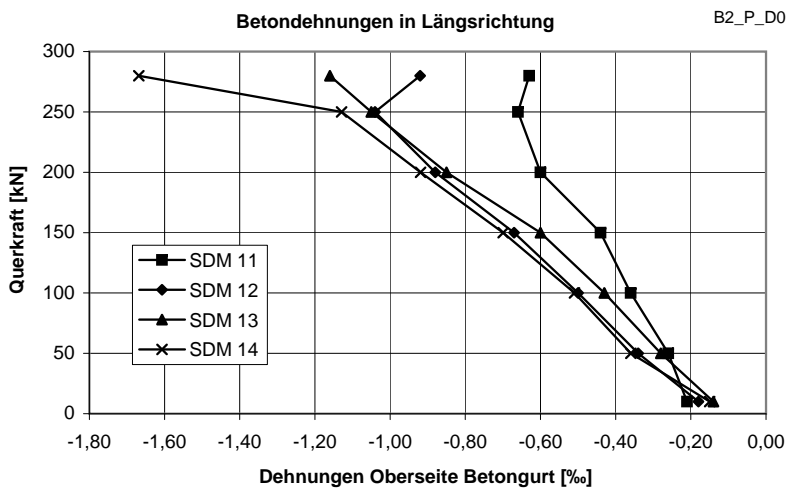
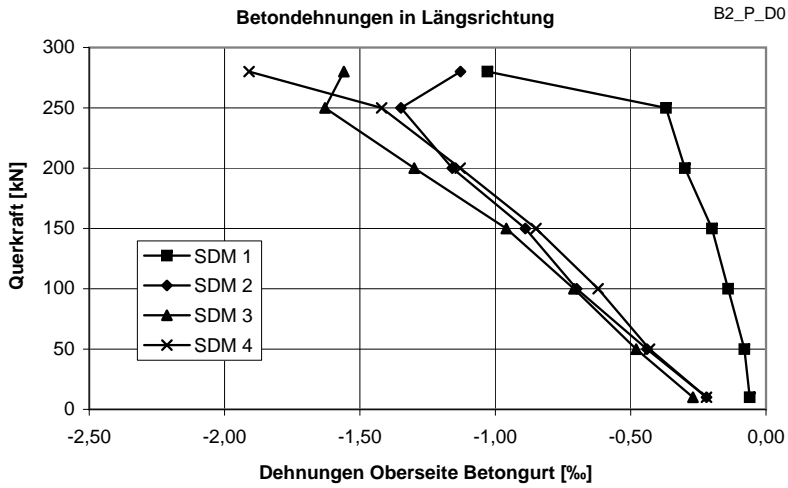
B.16.5. Querbewehrung

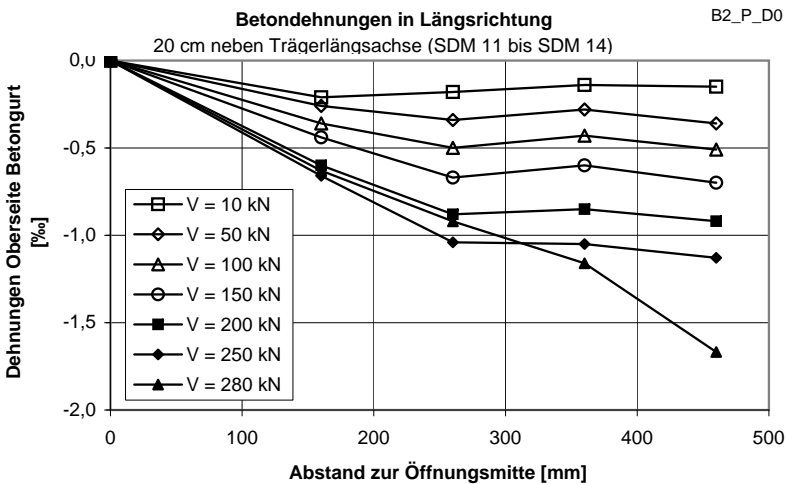
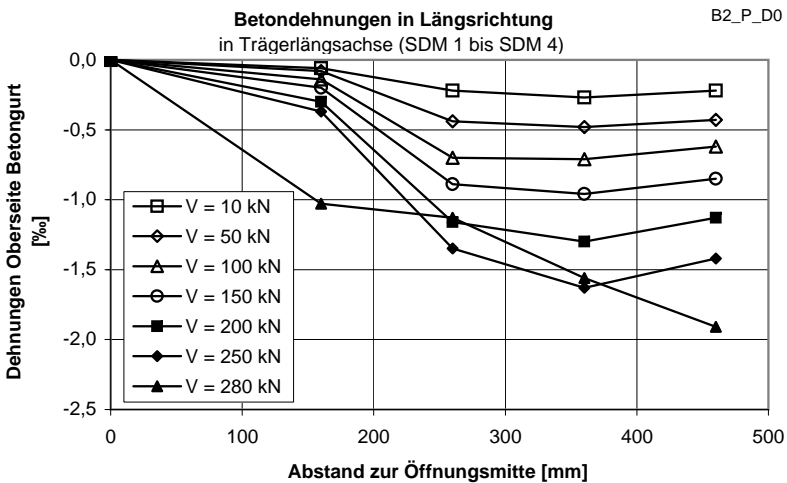
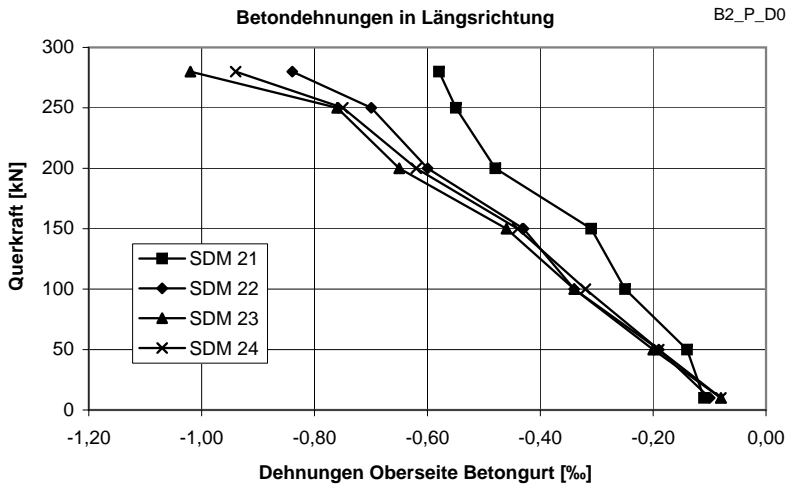


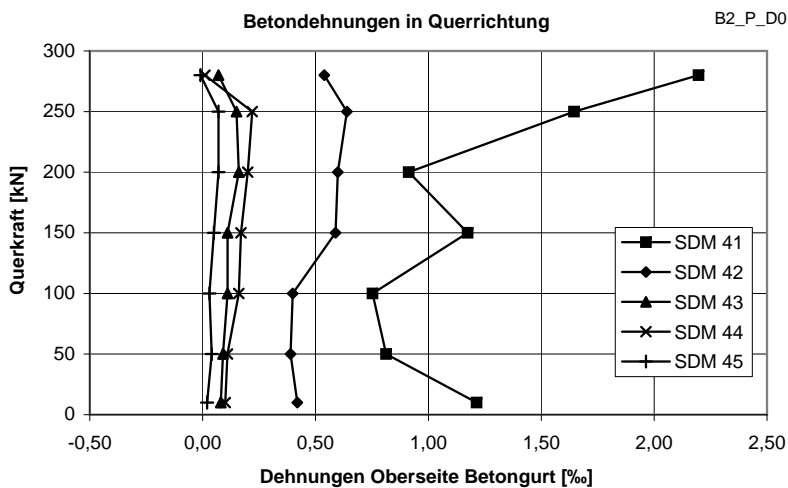
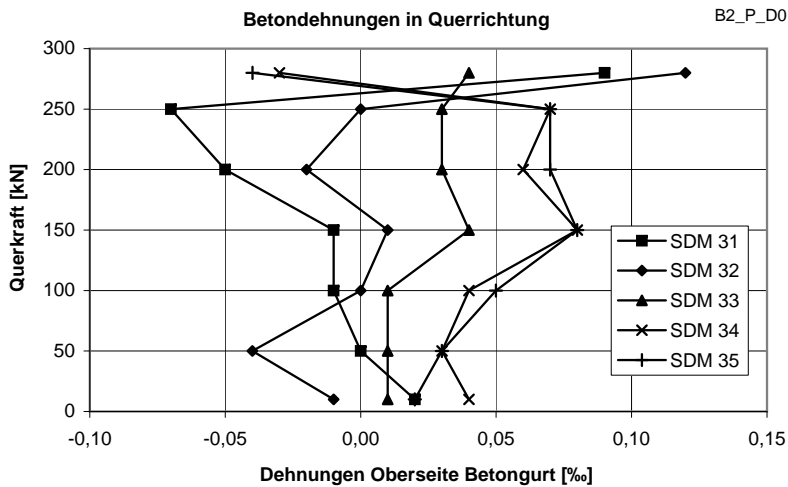
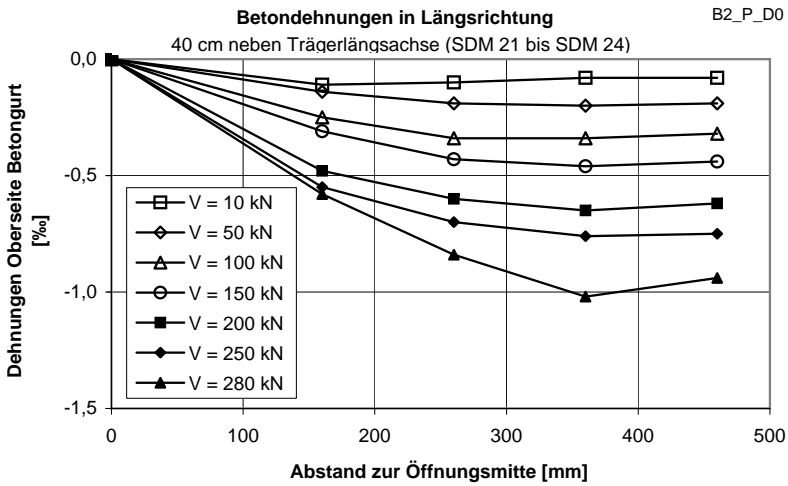


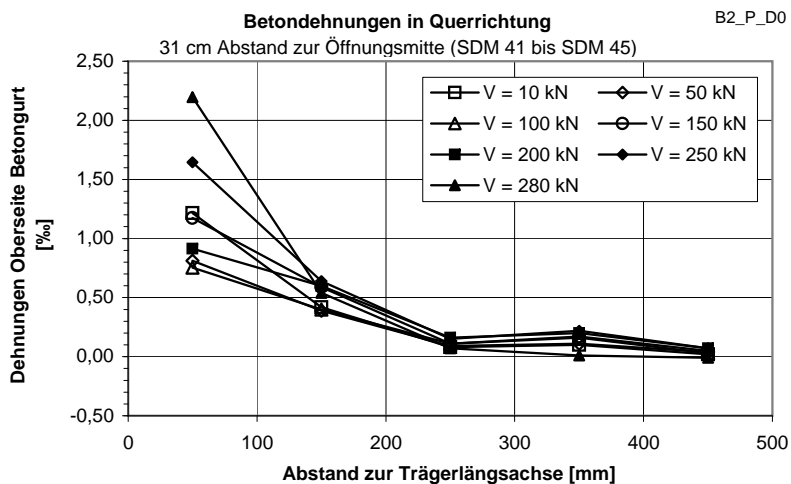
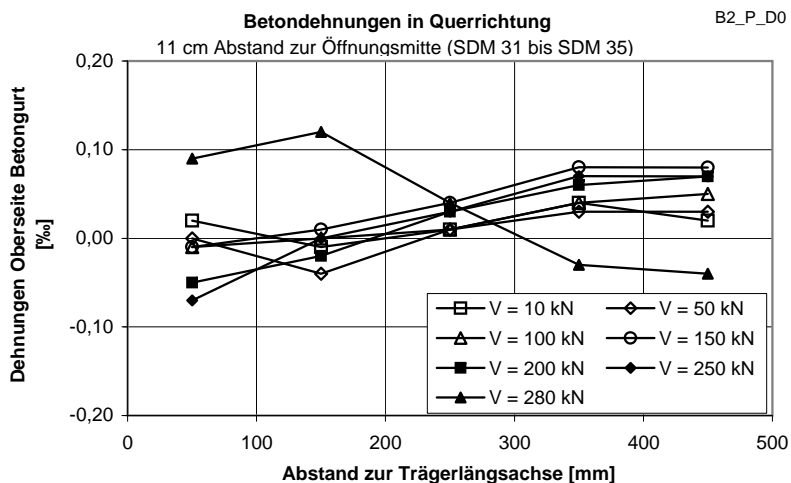
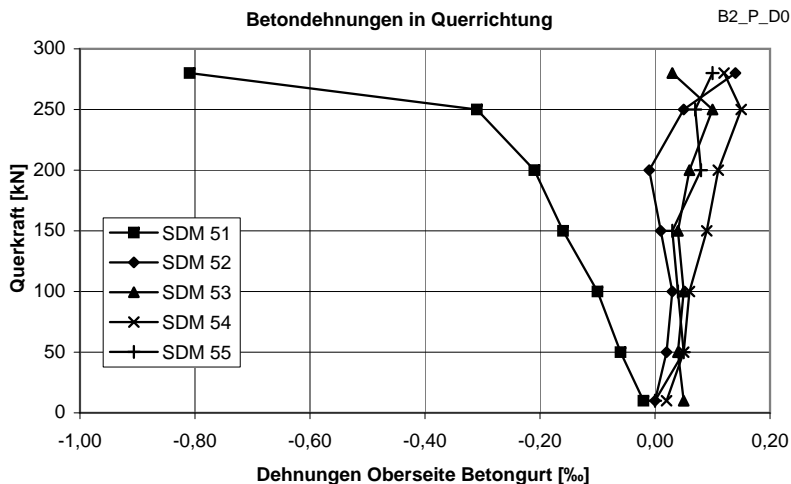


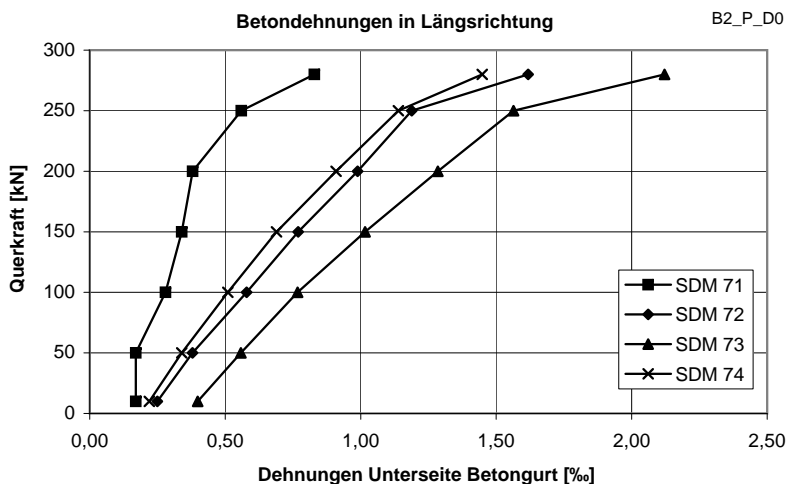
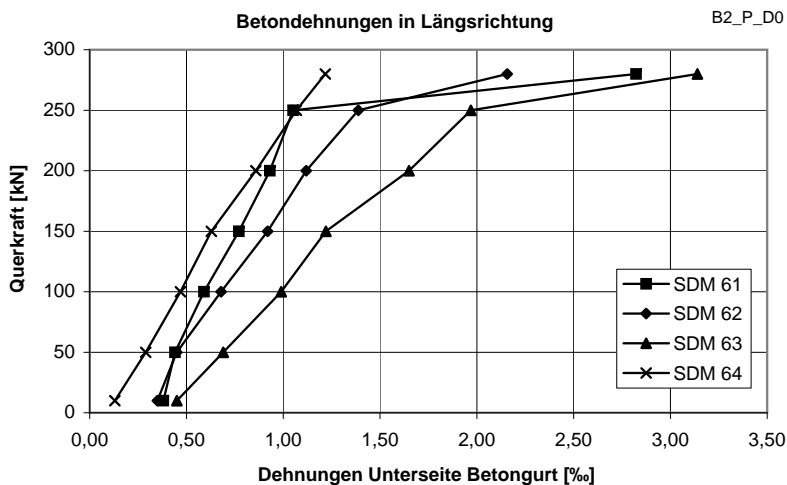
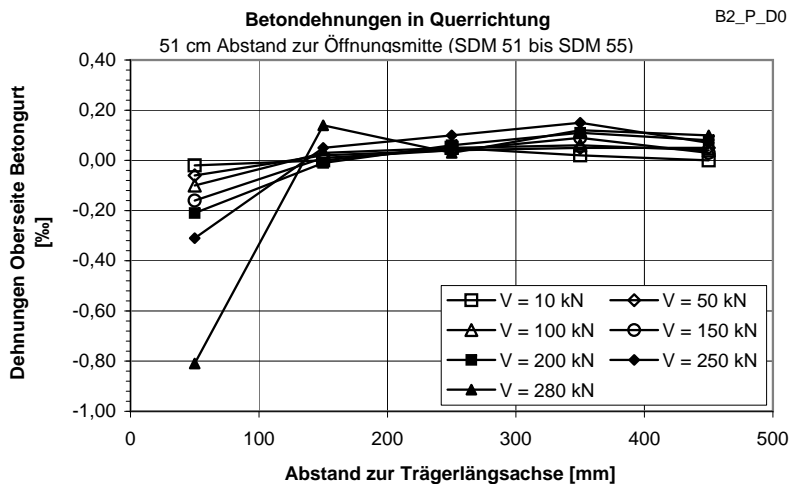
B.16.6. Betondehnungen

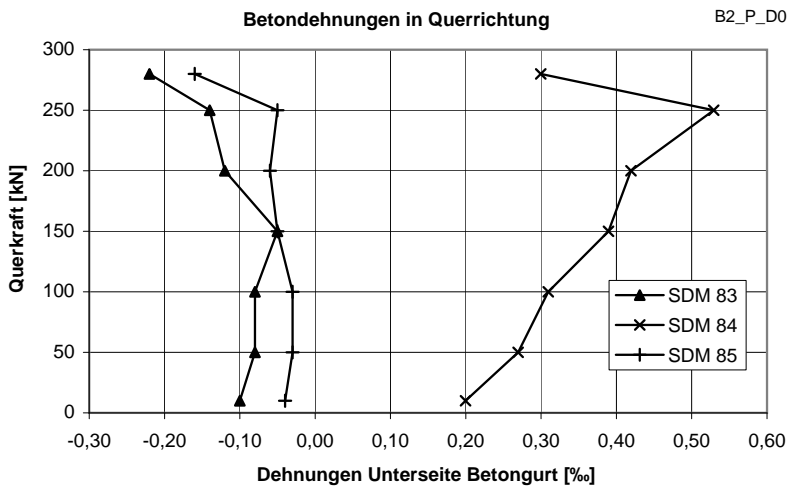
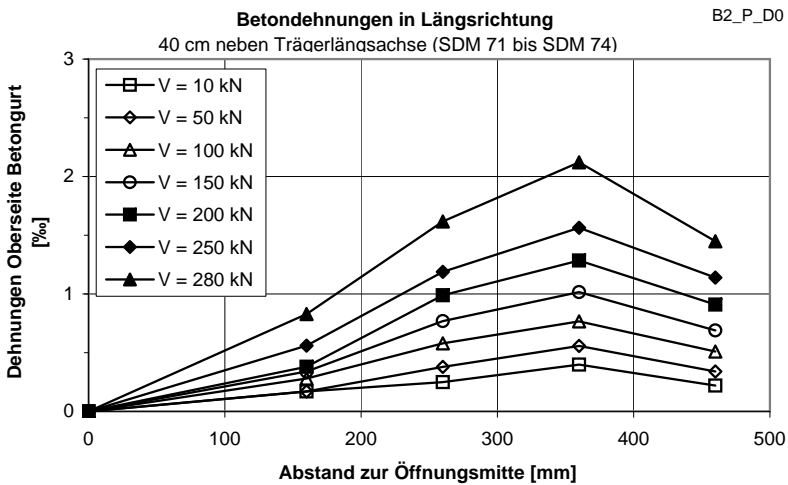
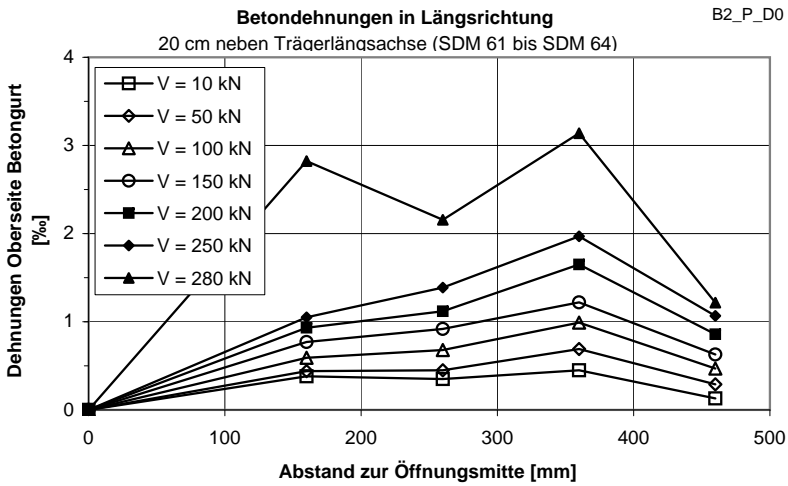


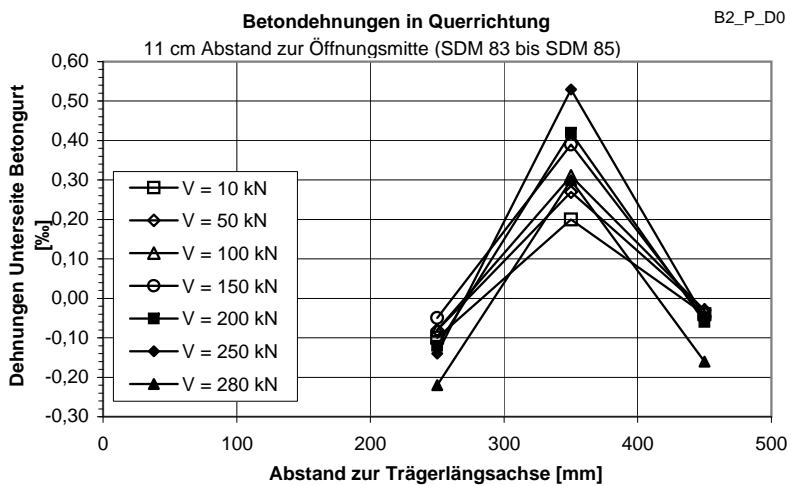
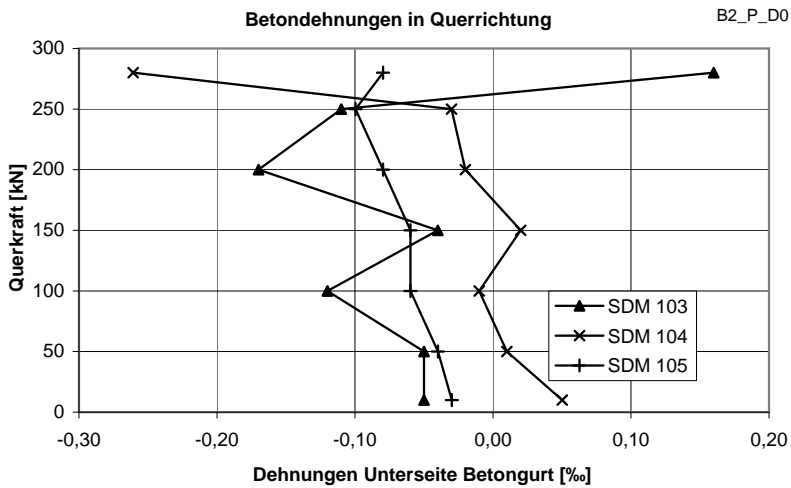
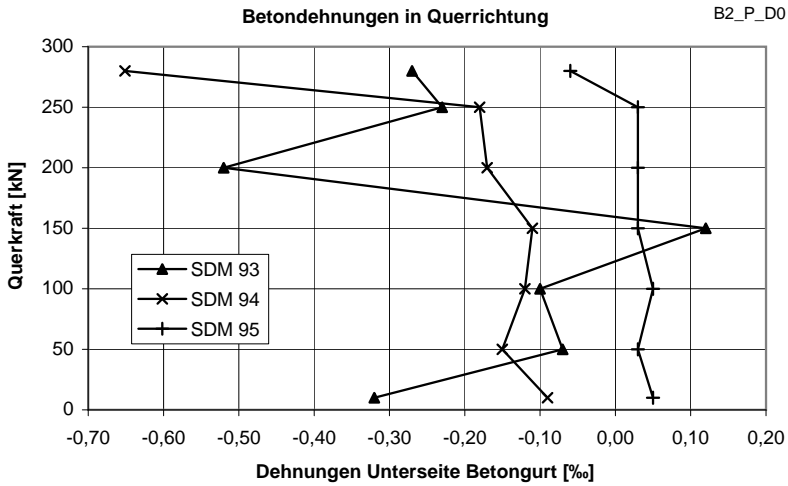


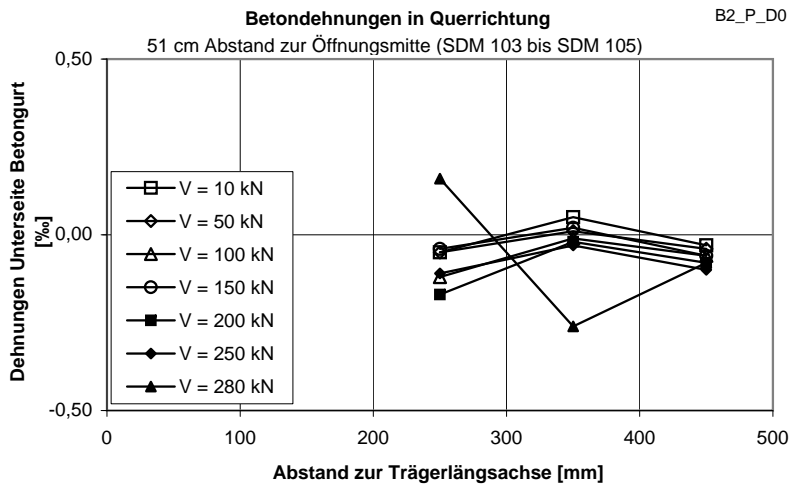
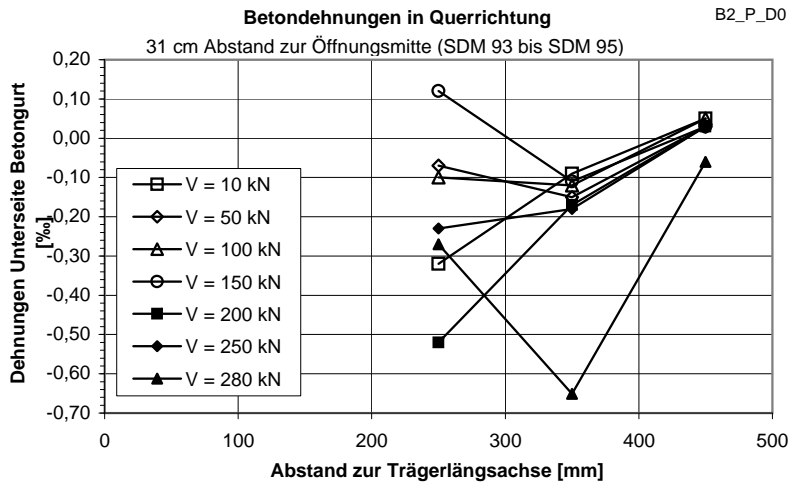






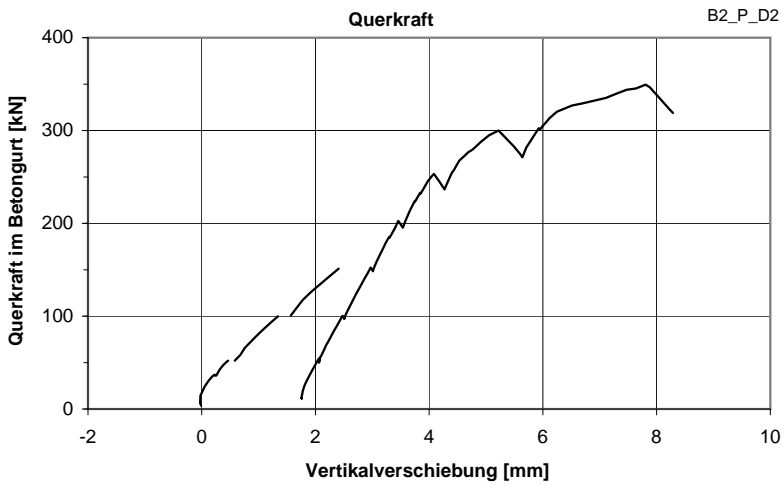
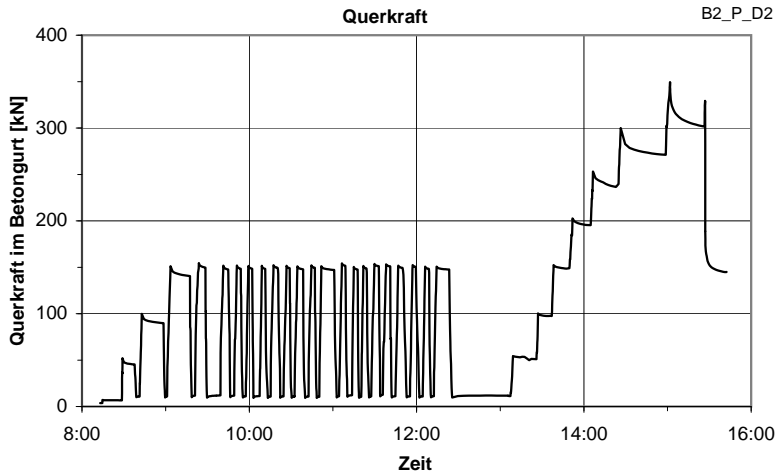


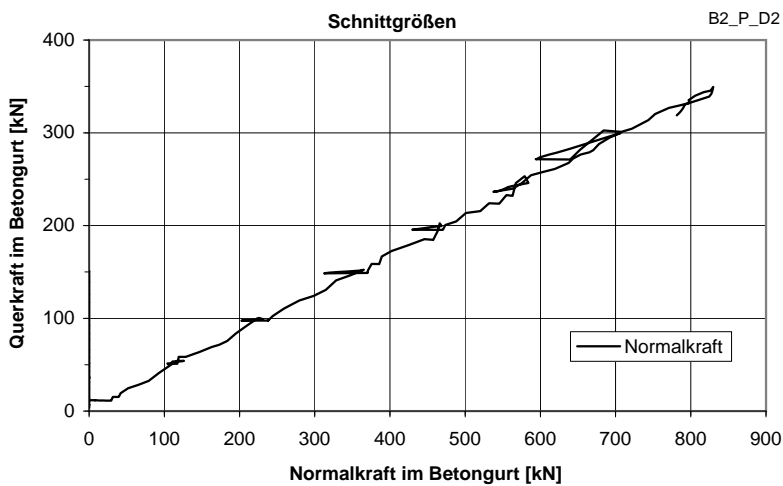
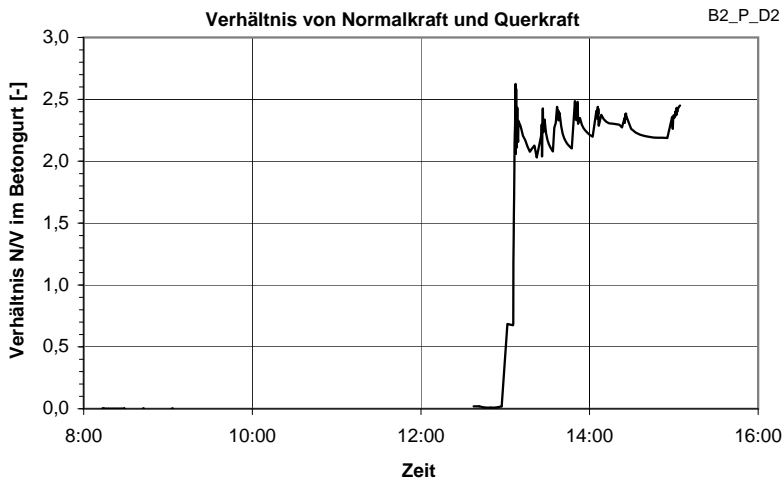
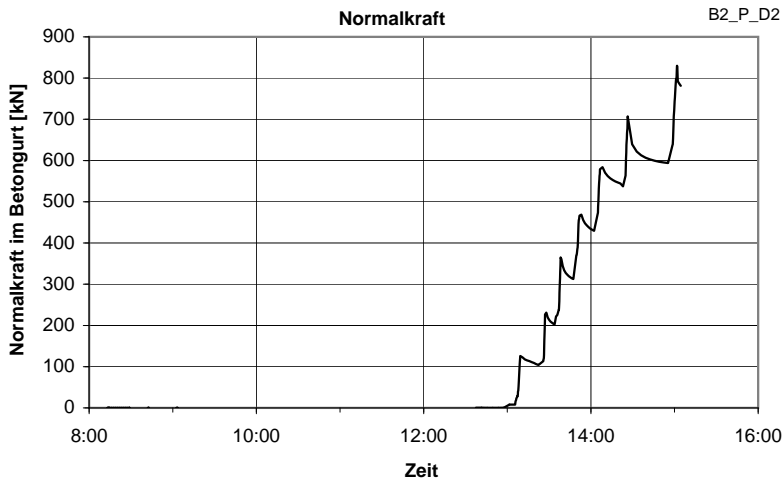


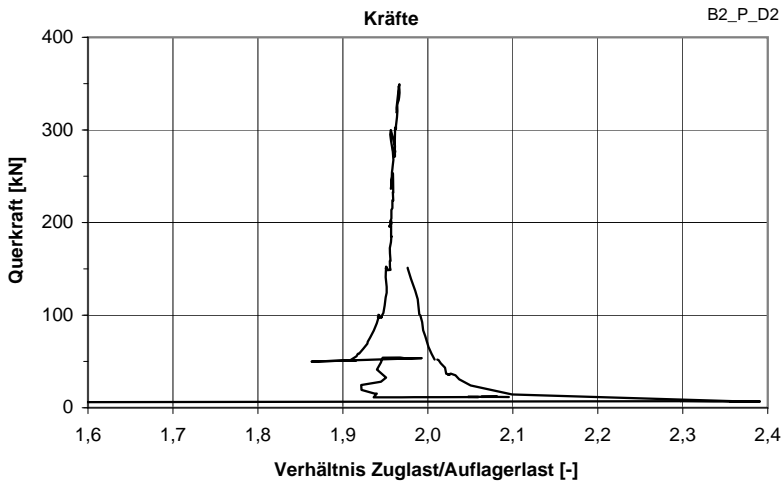
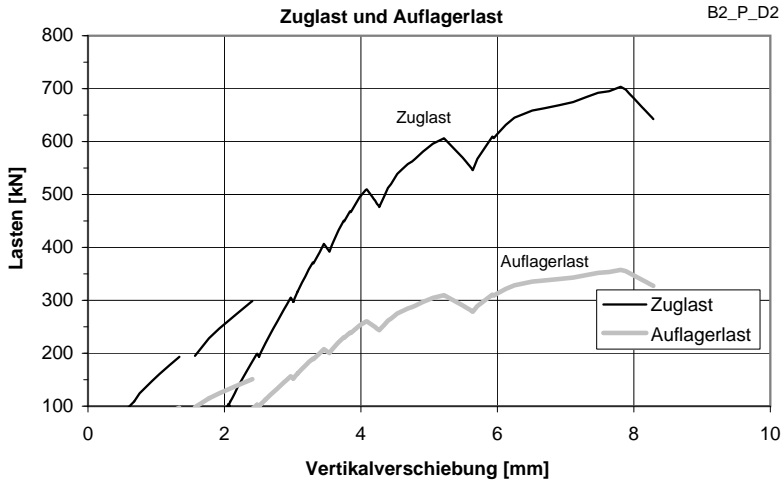


B.17. Versuch B2_P_D2

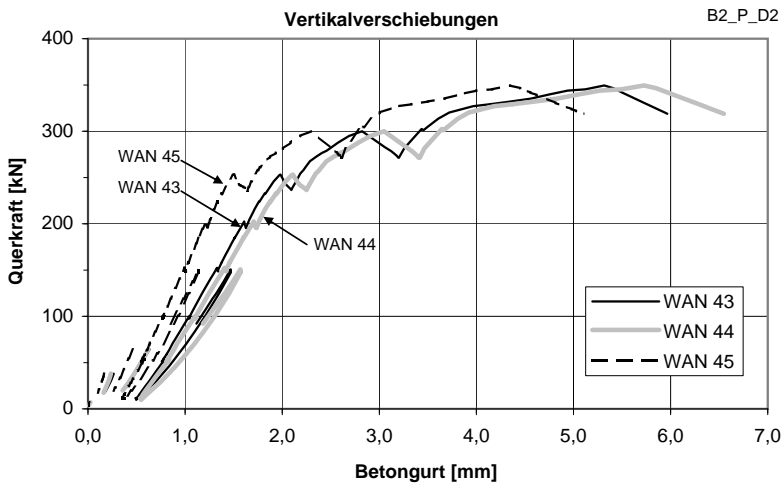
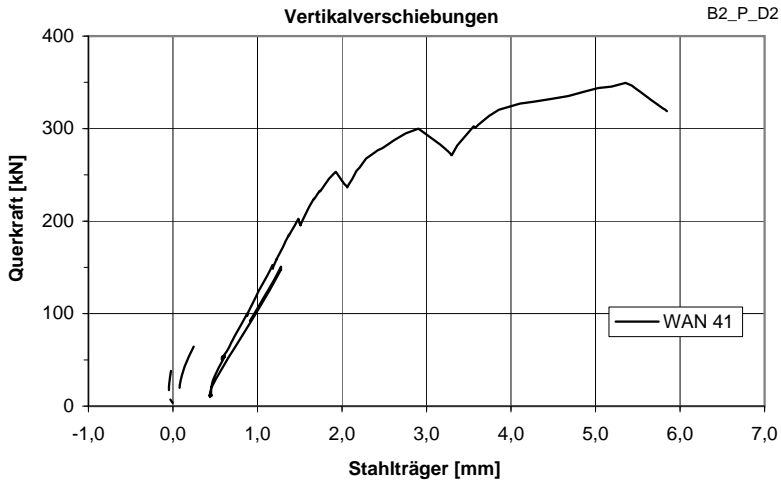
B.17.1. Kräfte

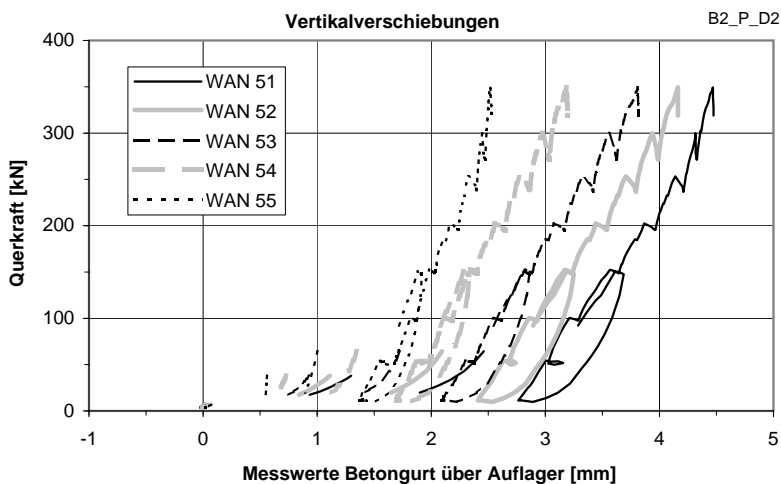
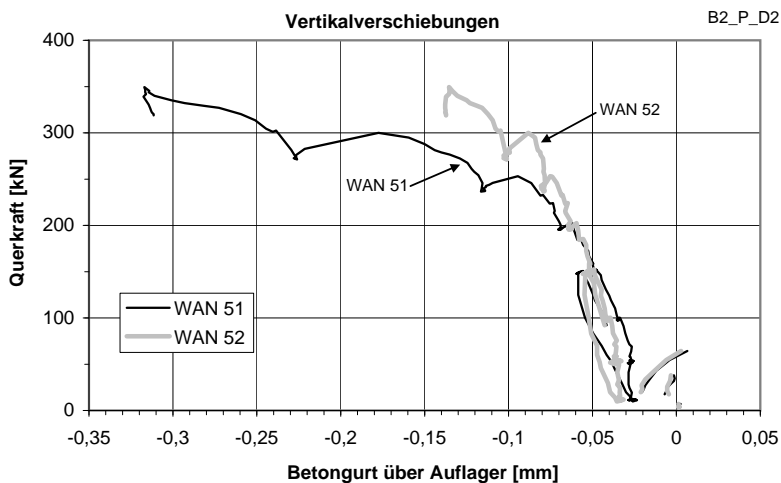
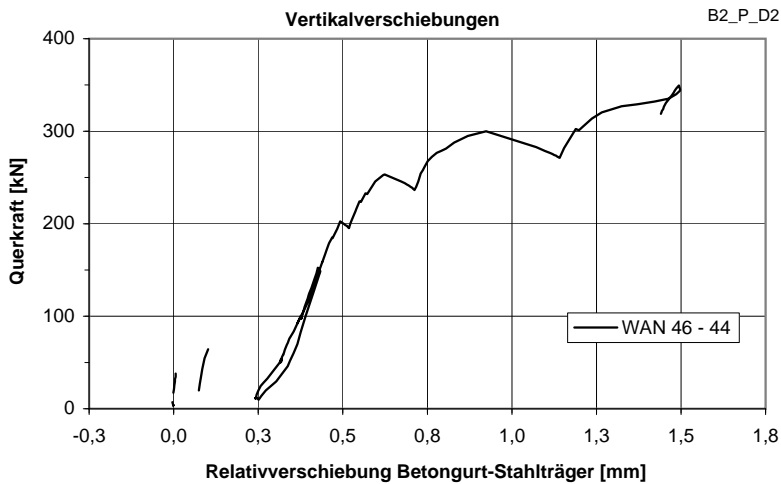




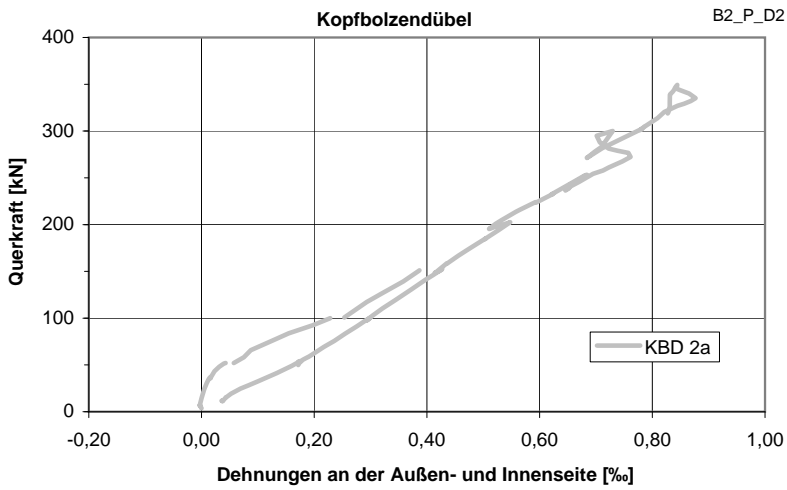
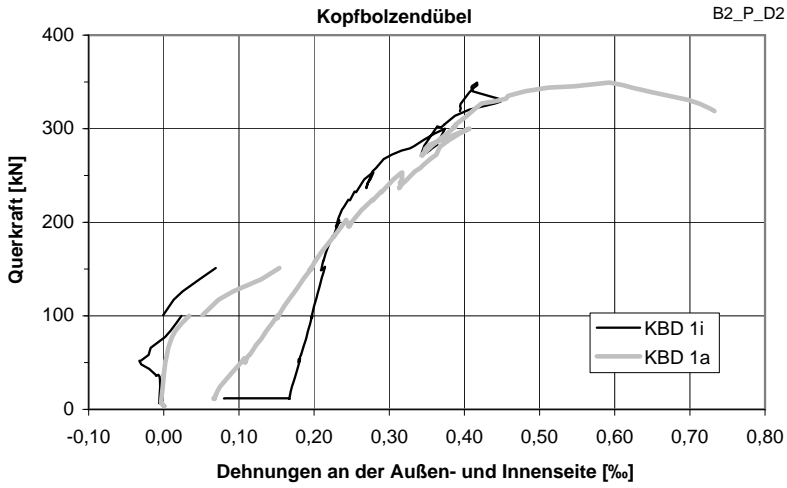


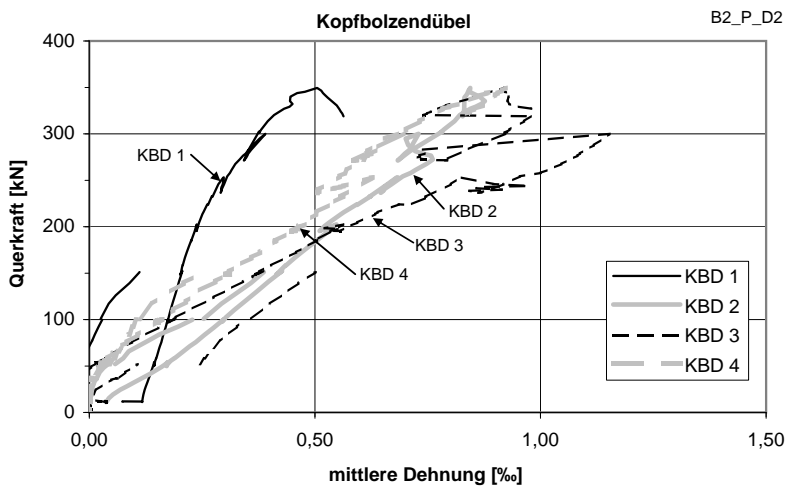
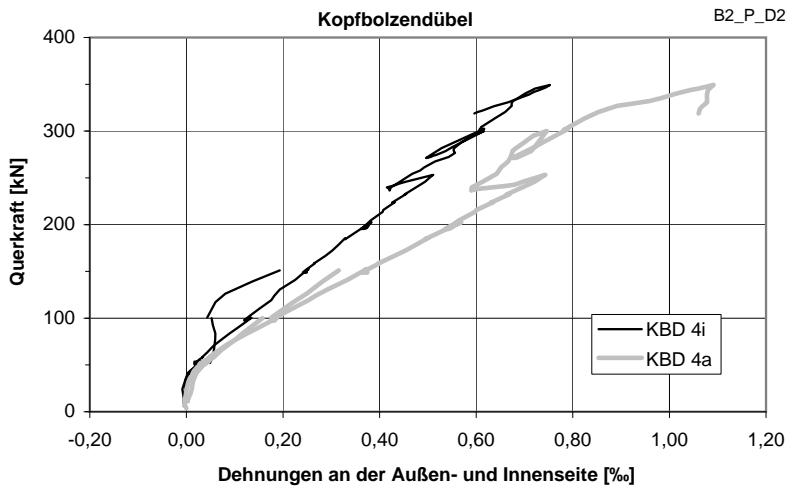
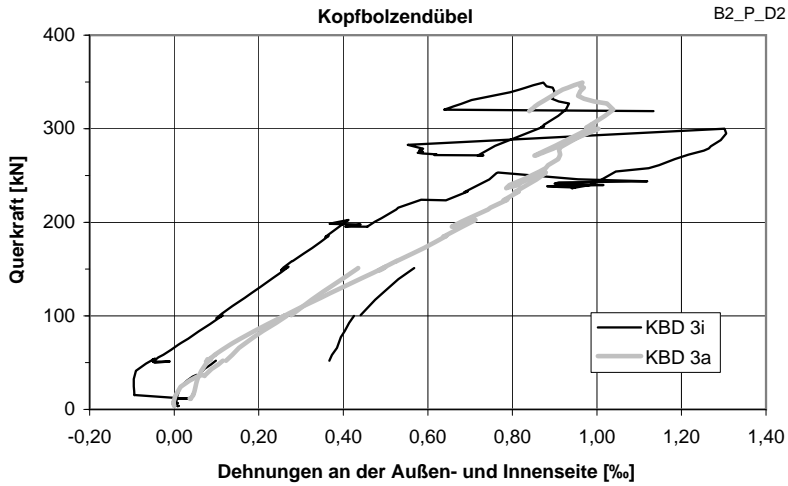
B.17.2. Verformungen

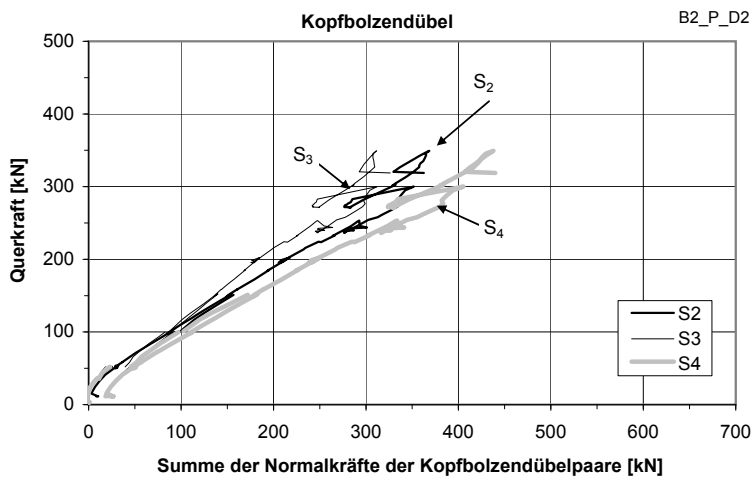
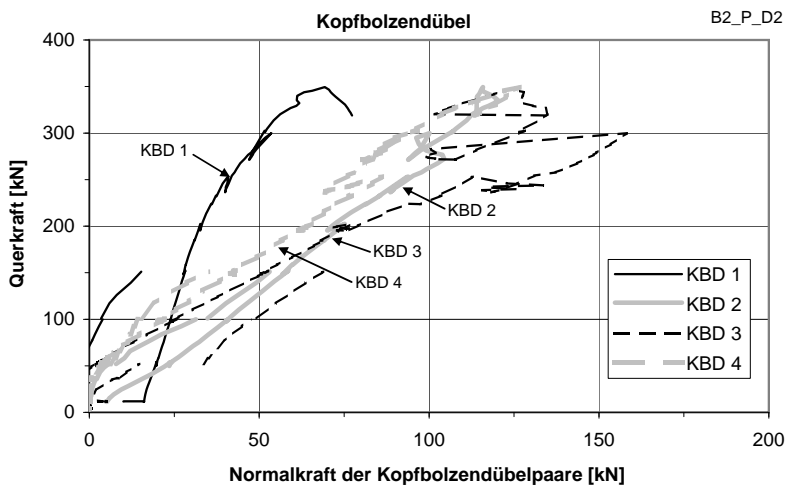
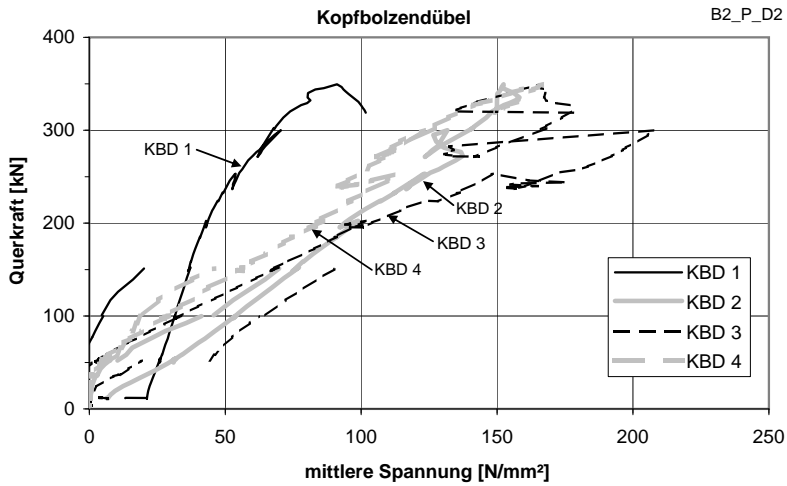




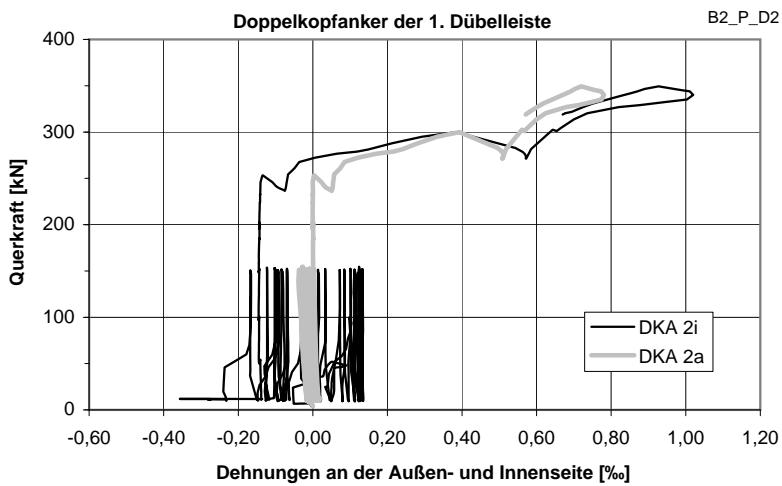
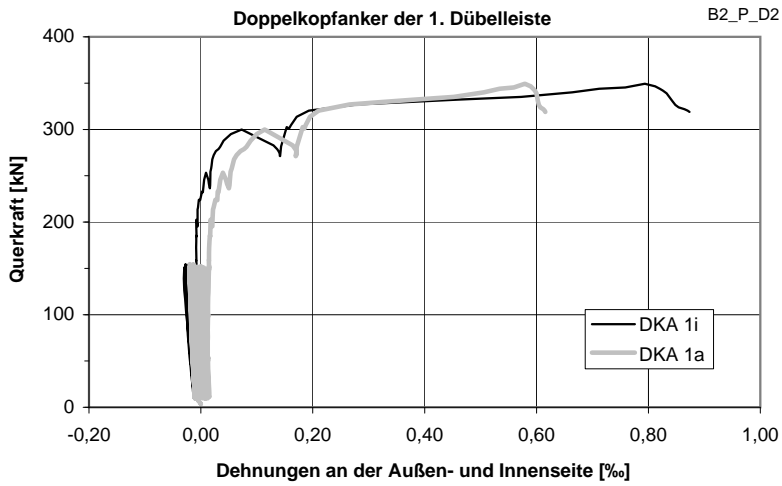
B.17.3. Kopfbolzendübel

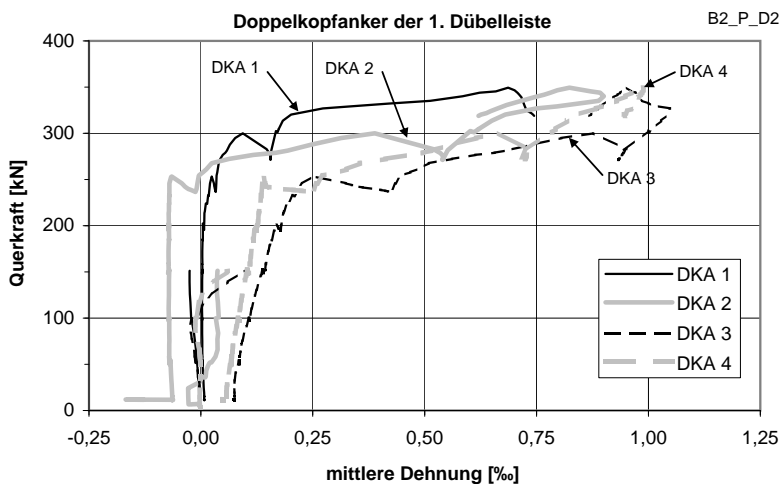
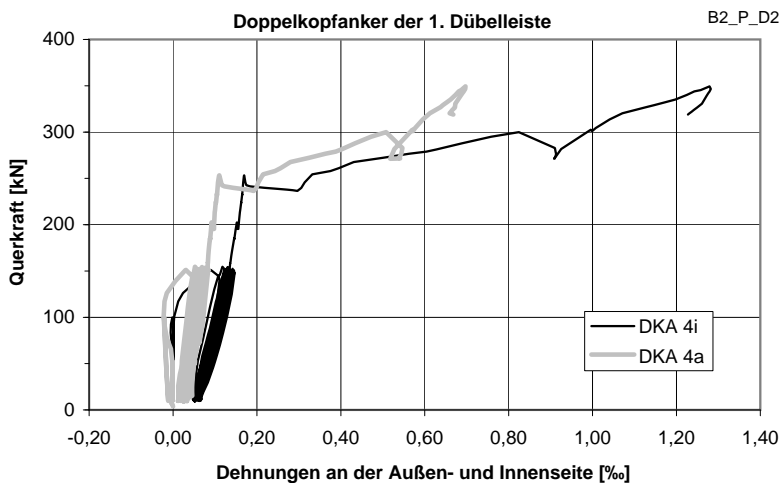
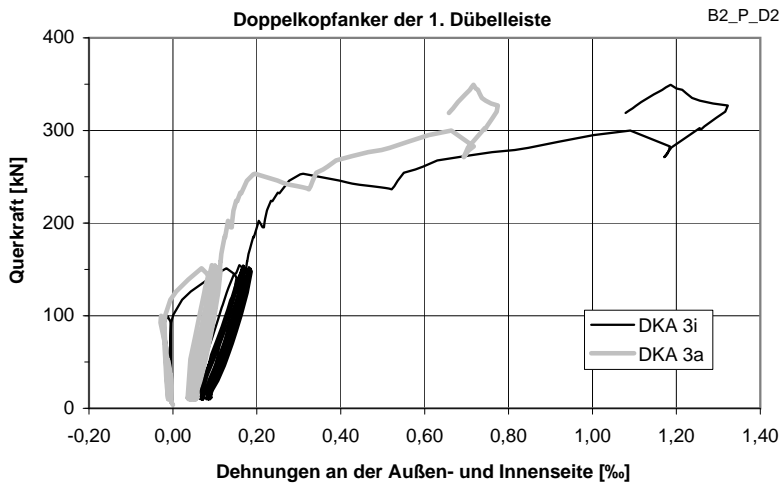


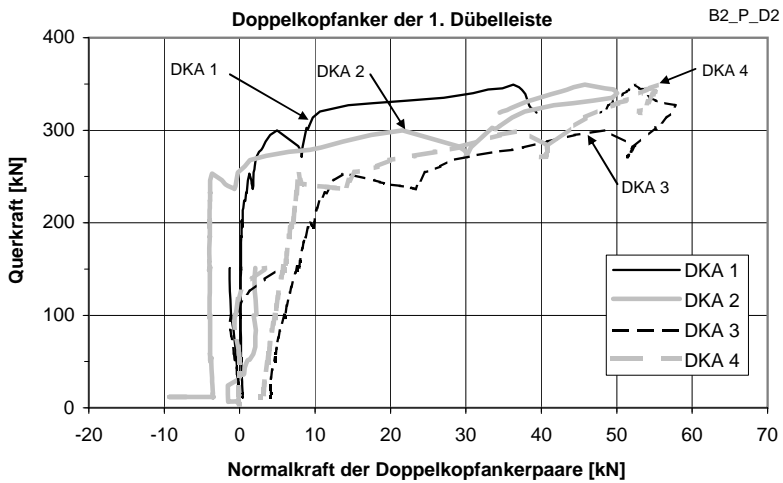
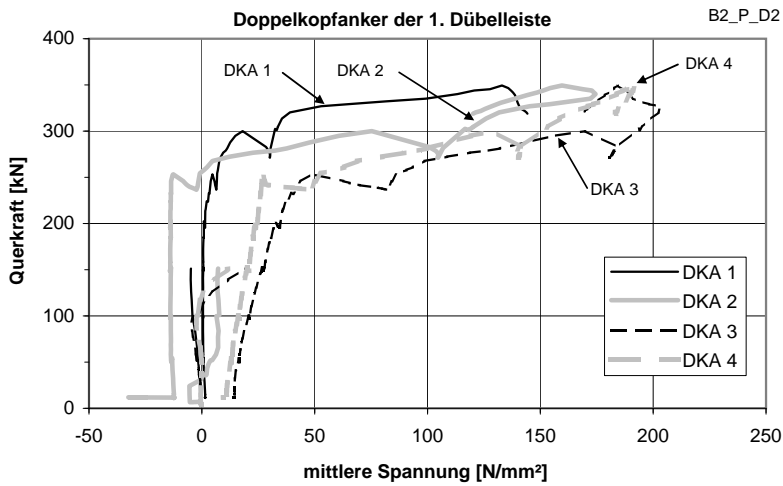




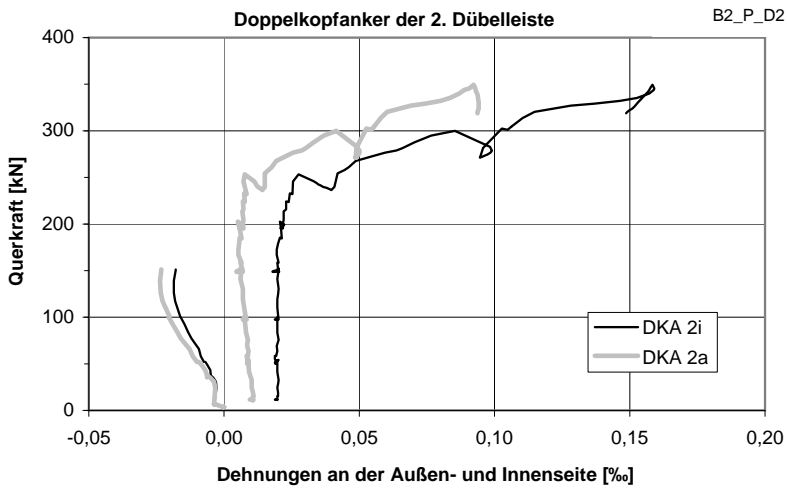
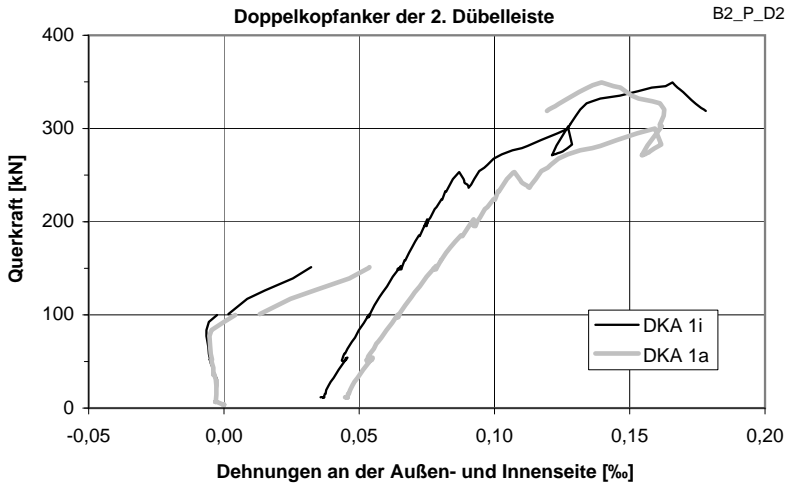
B.17.4. Doppelkopfkanker der ersten Dübelleiste

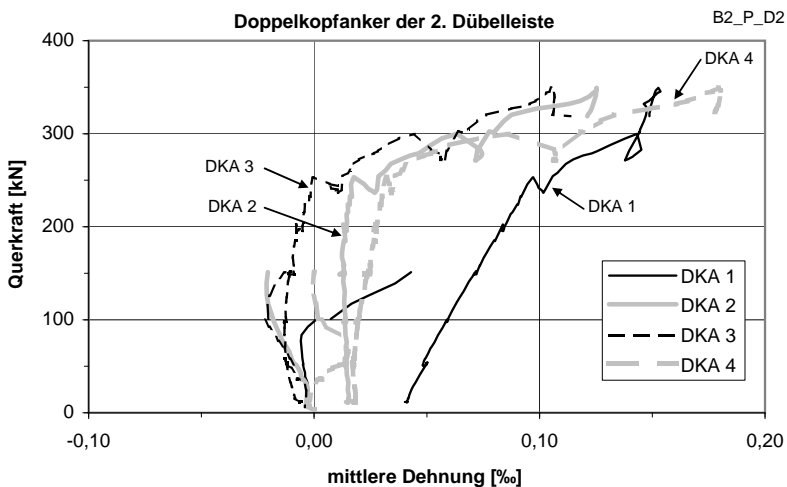
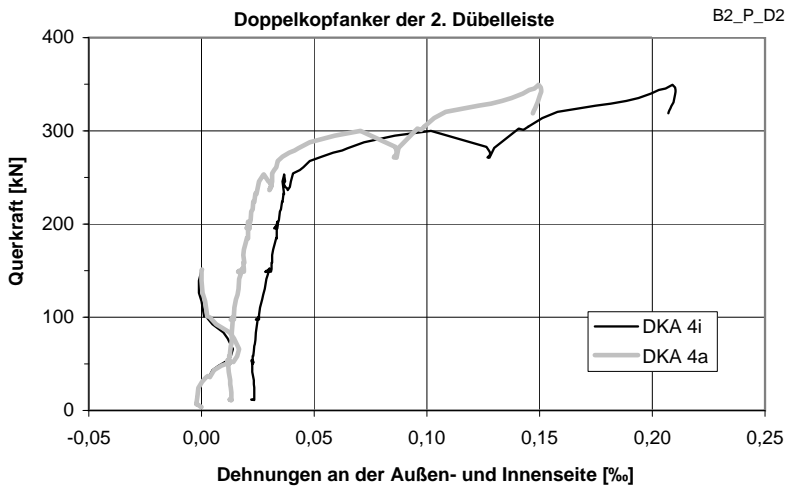
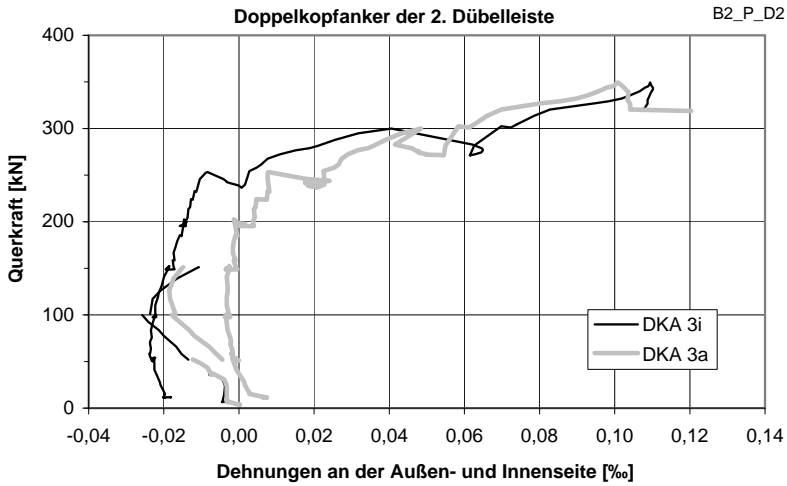


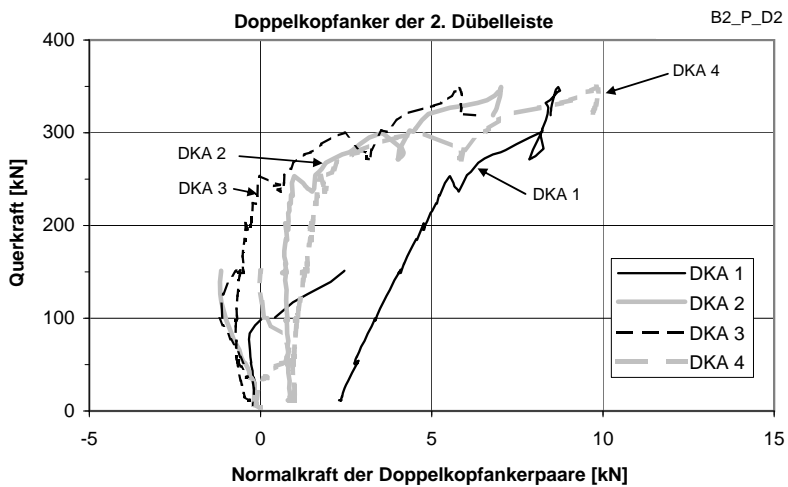
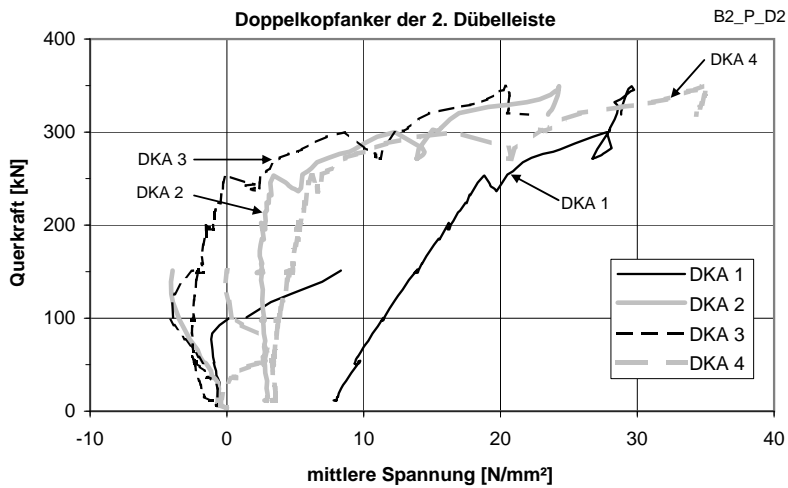




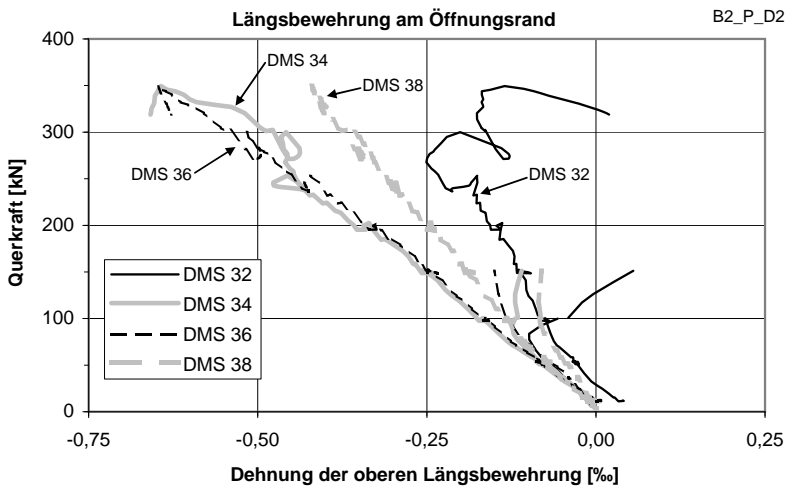
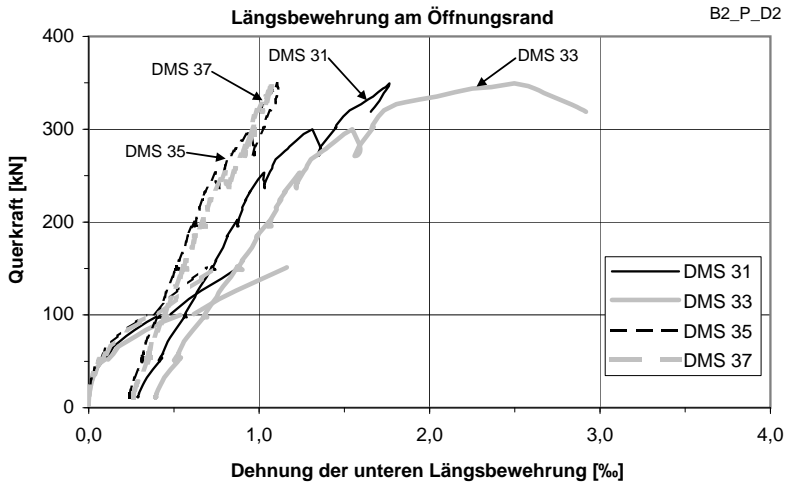
B.17.5. Doppelkopfkanker der zweiten Dübelleiste

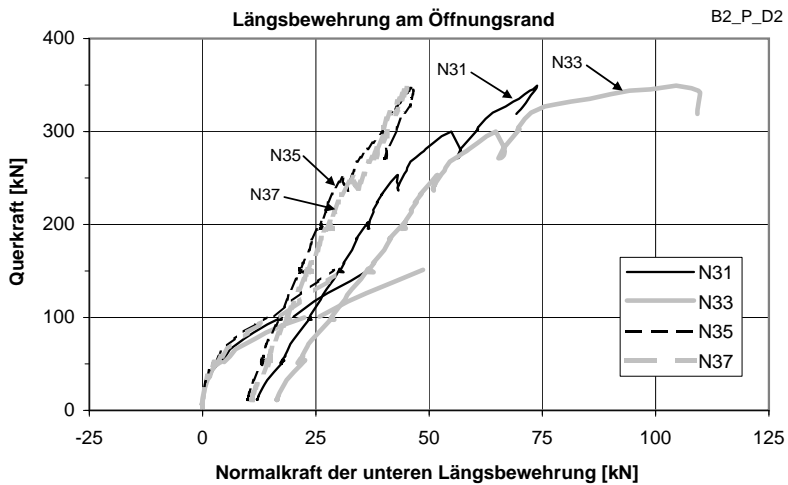
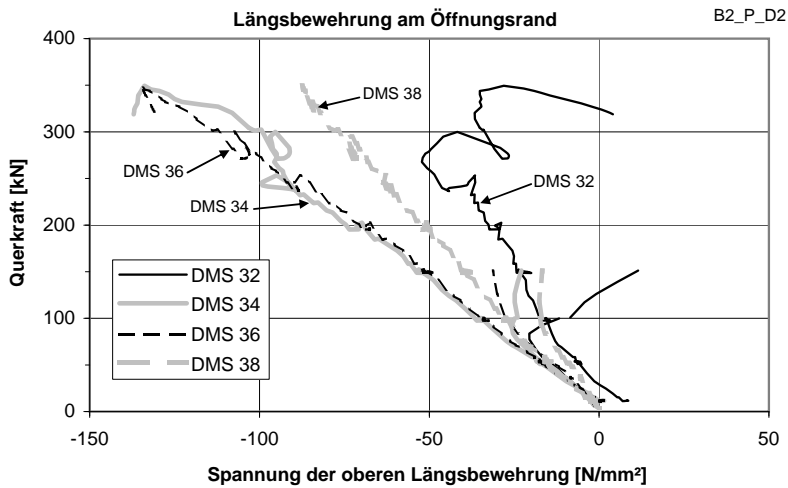
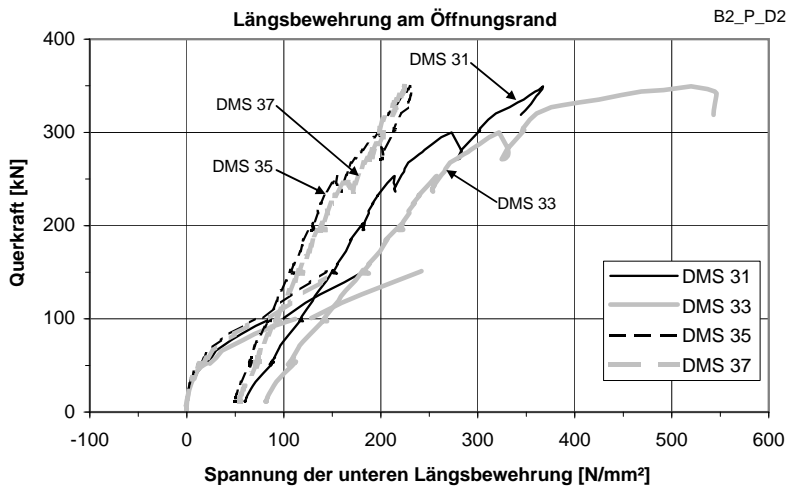


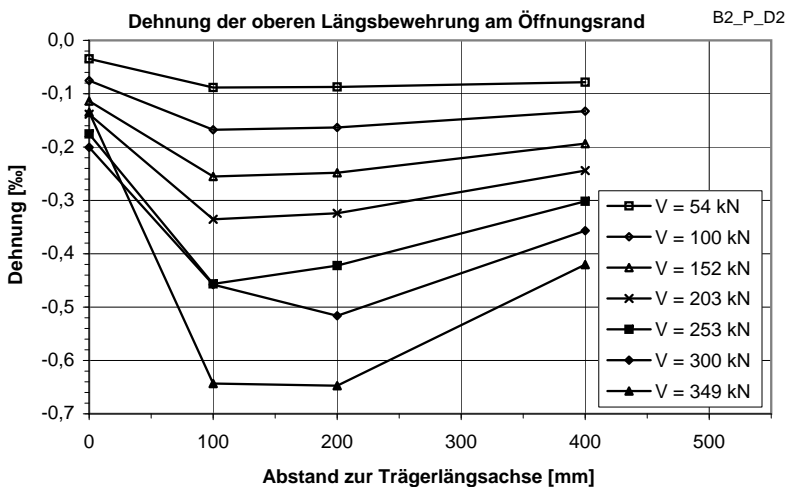
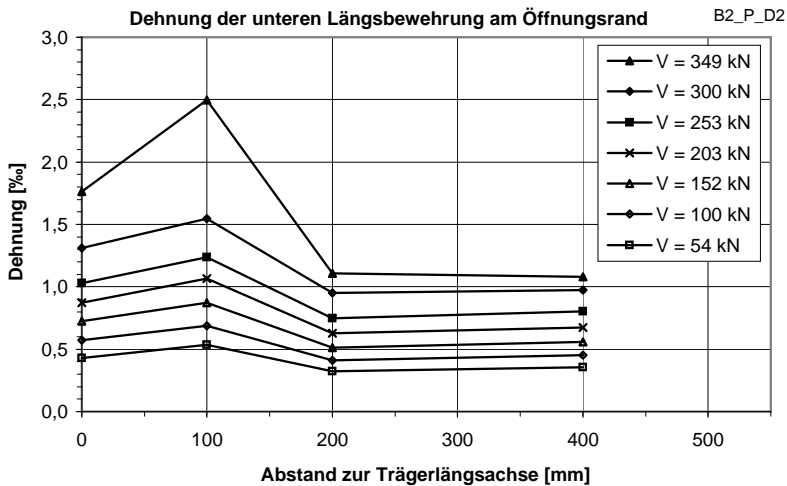
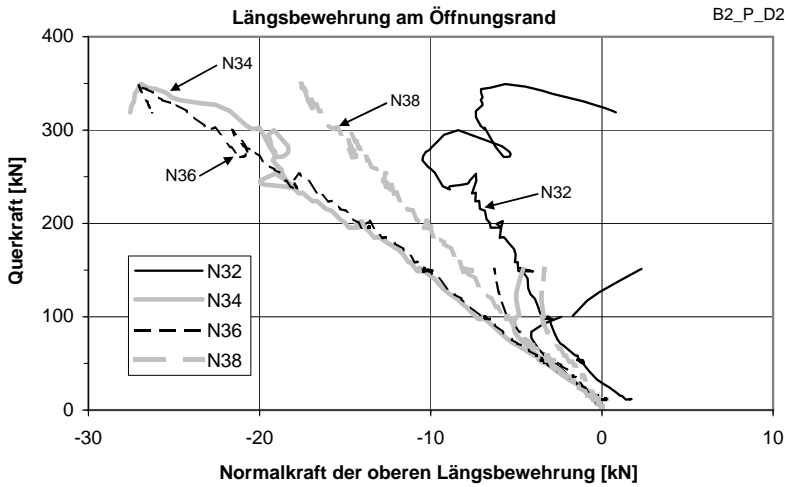


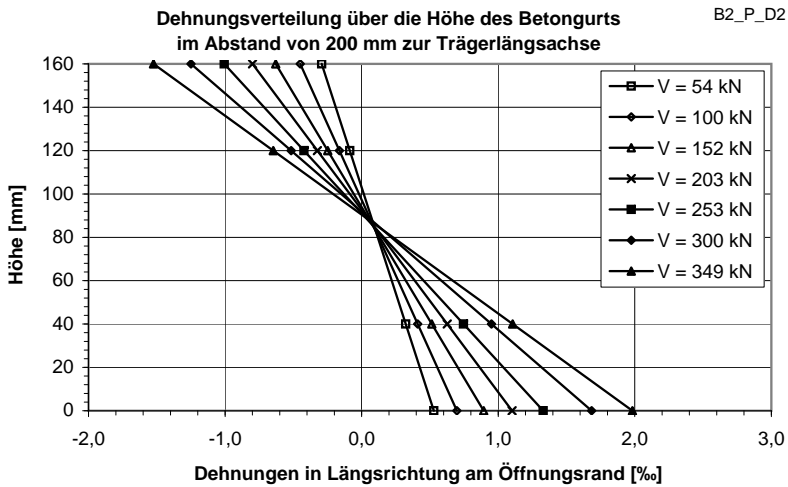
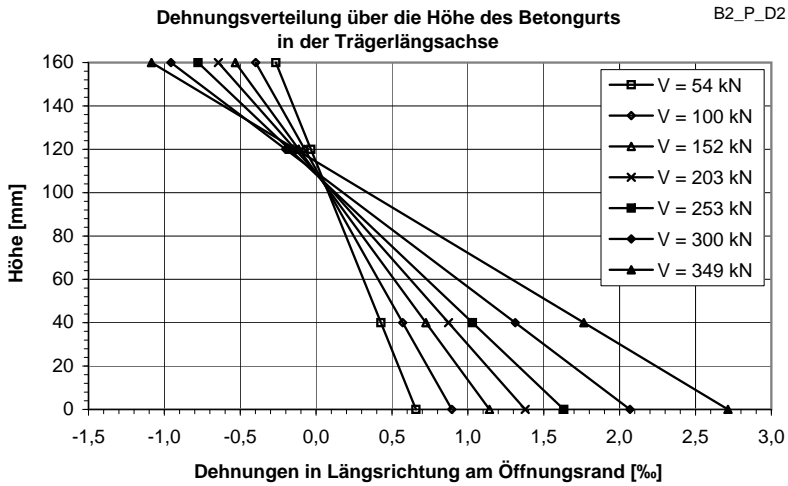


B.17.6. Längsbewehrung

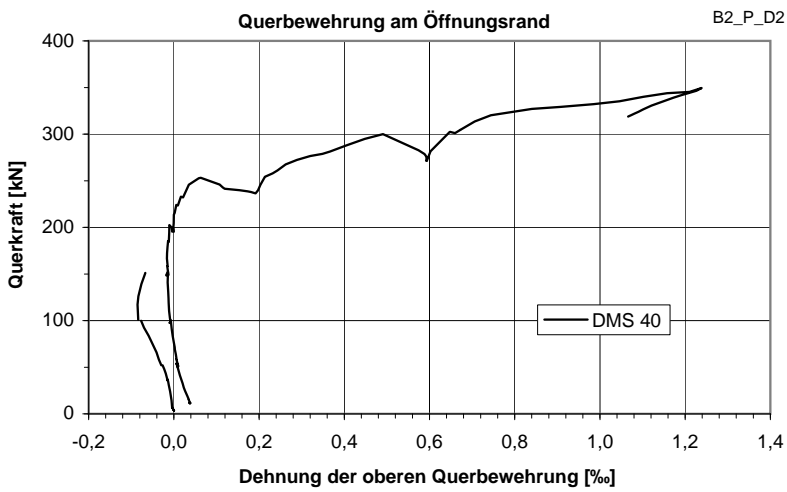
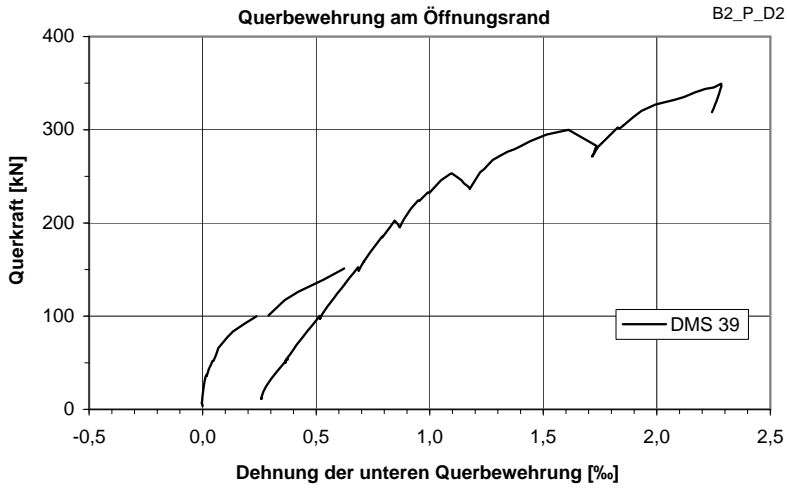


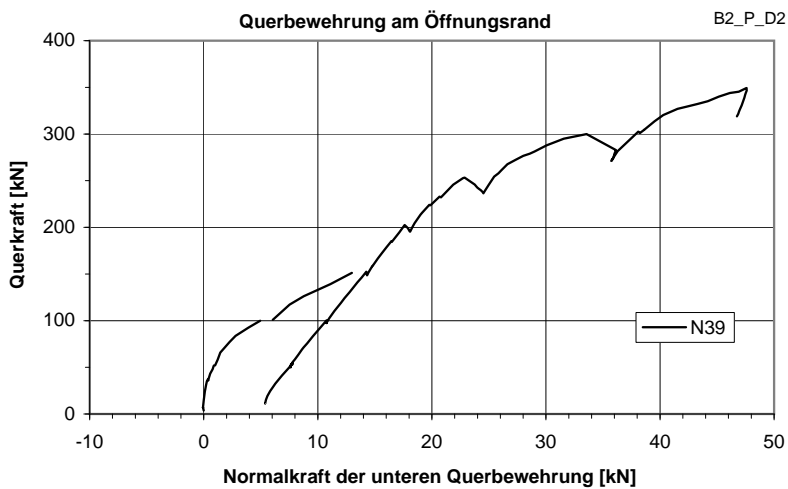
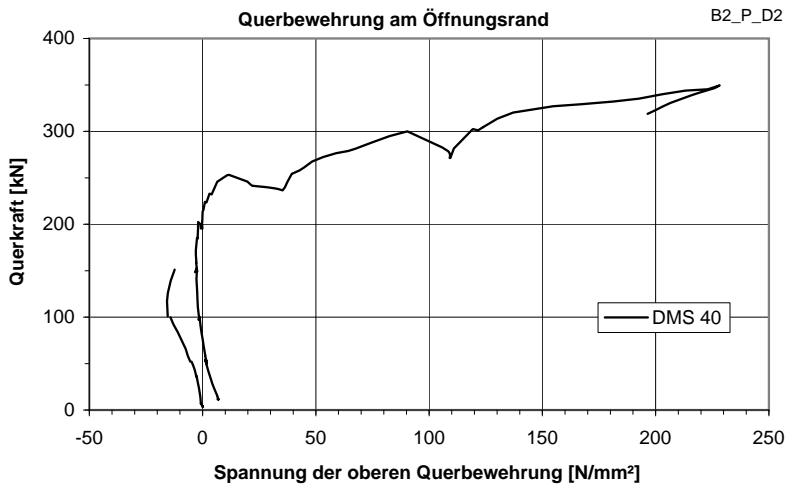
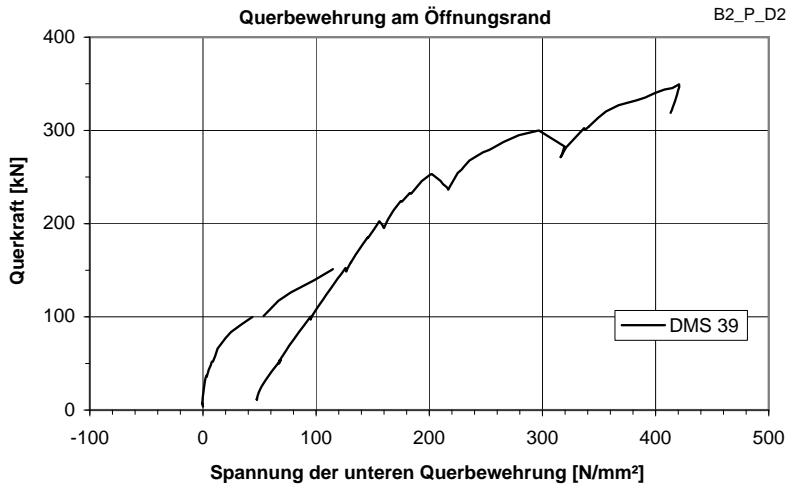


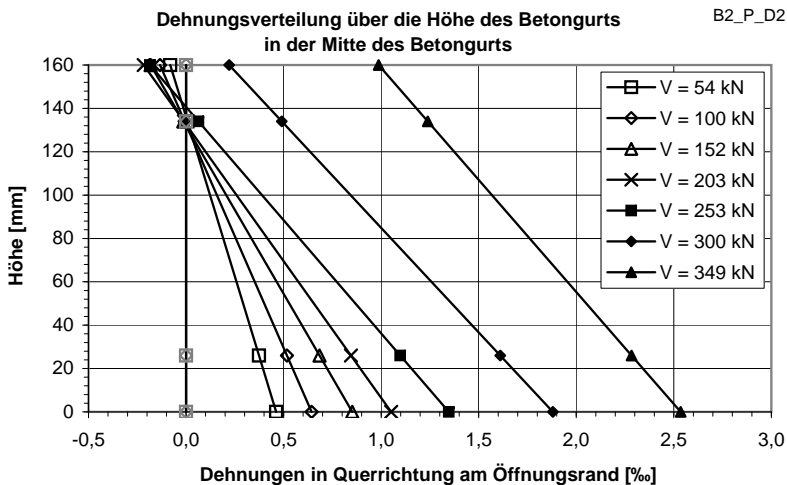
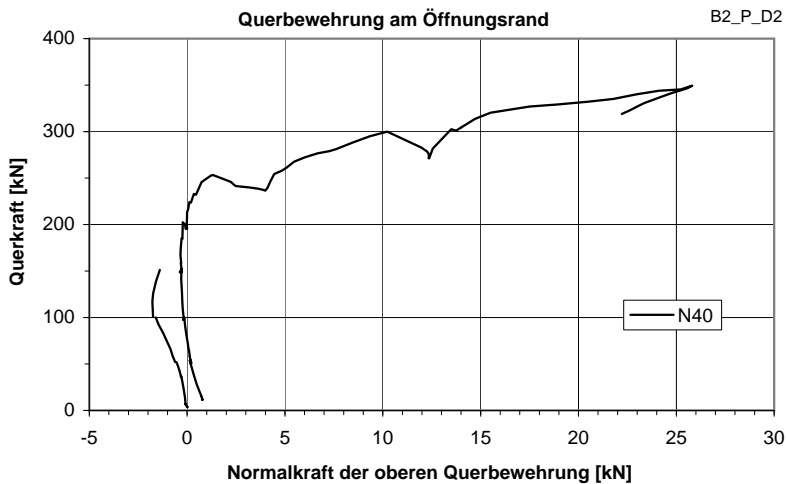




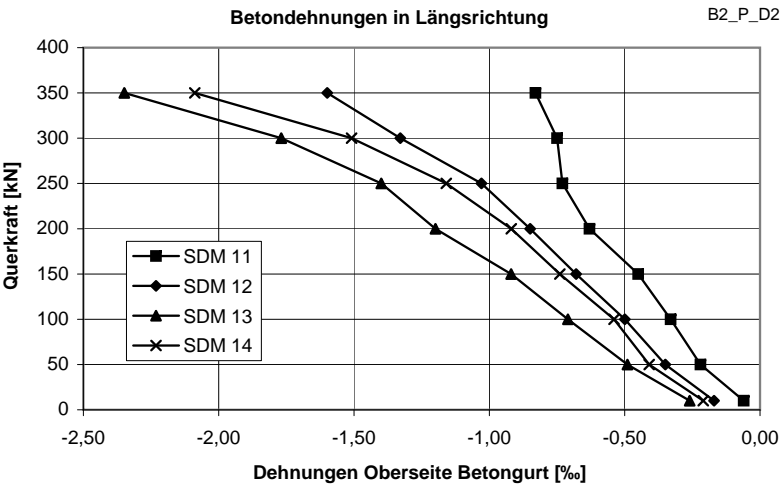
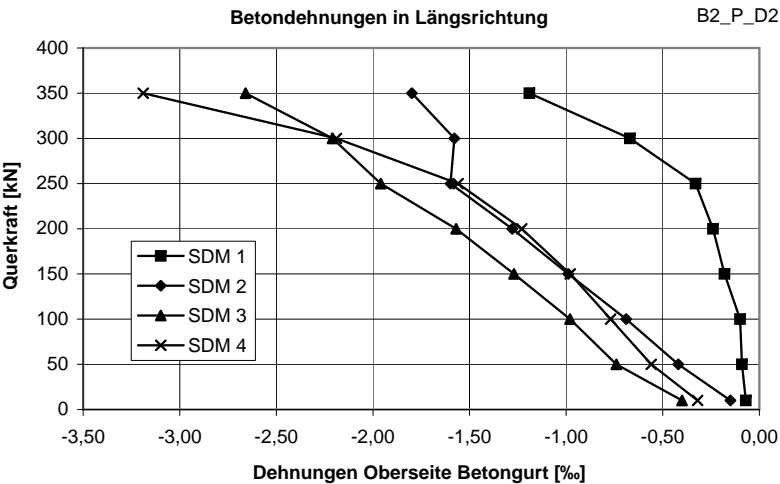
B.17.7. Querbewehrung

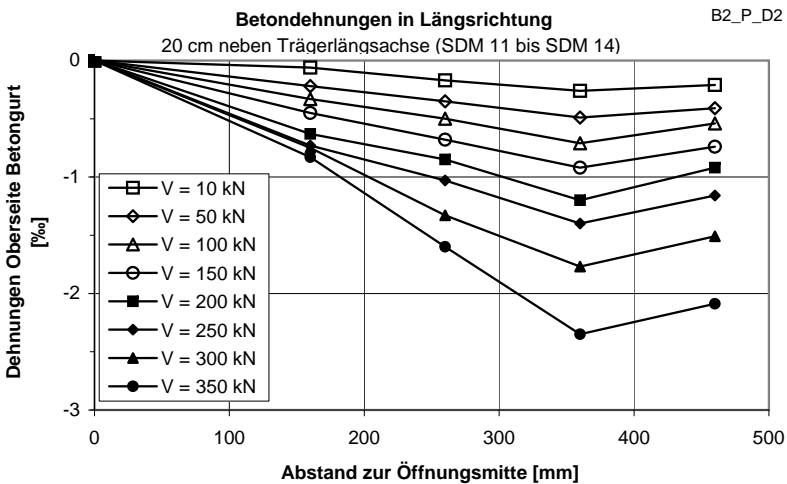
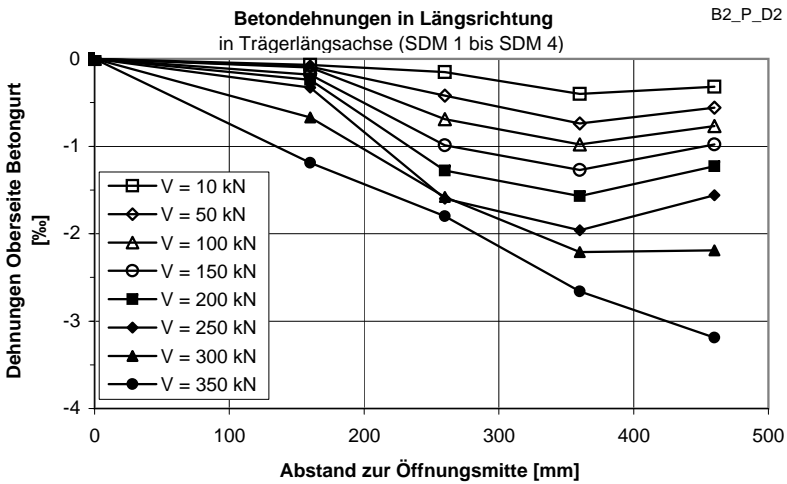
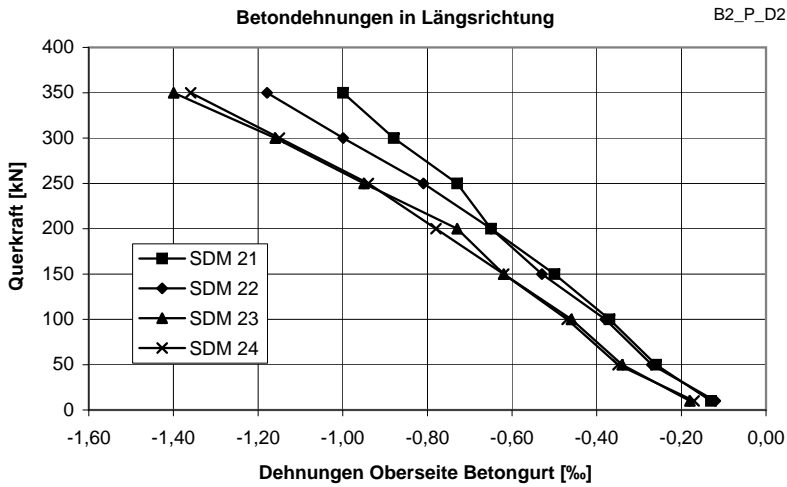


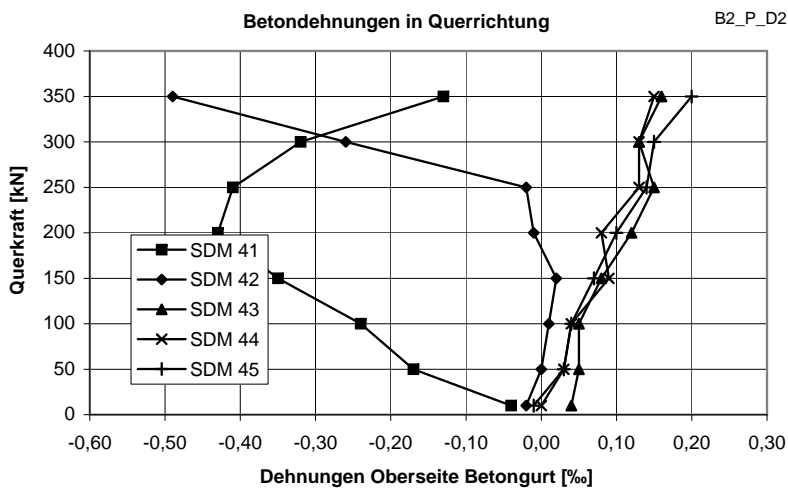
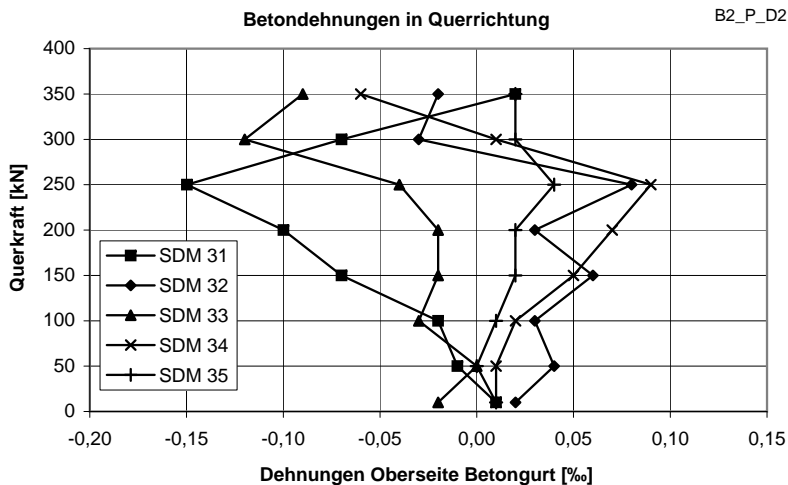
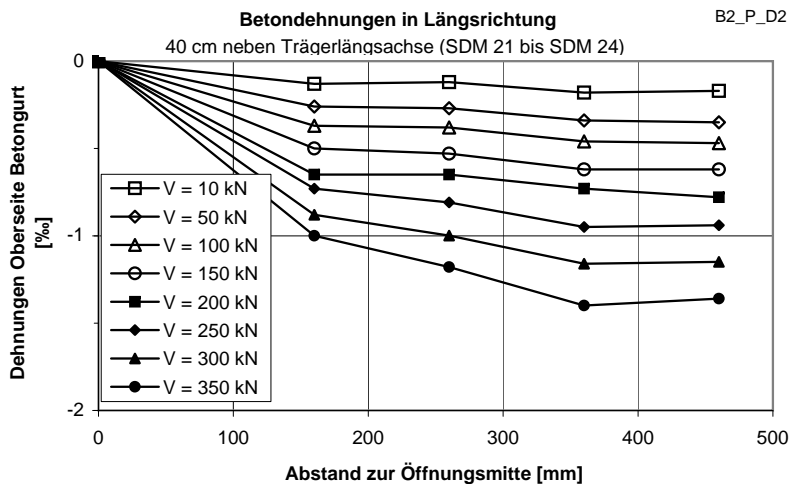


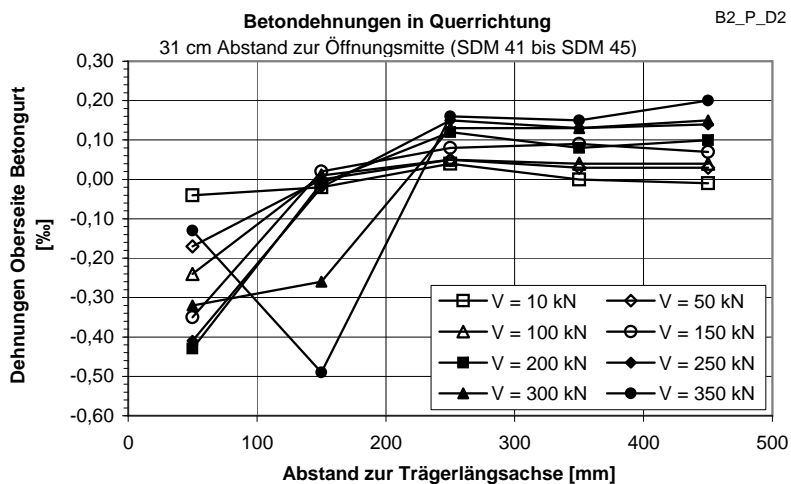
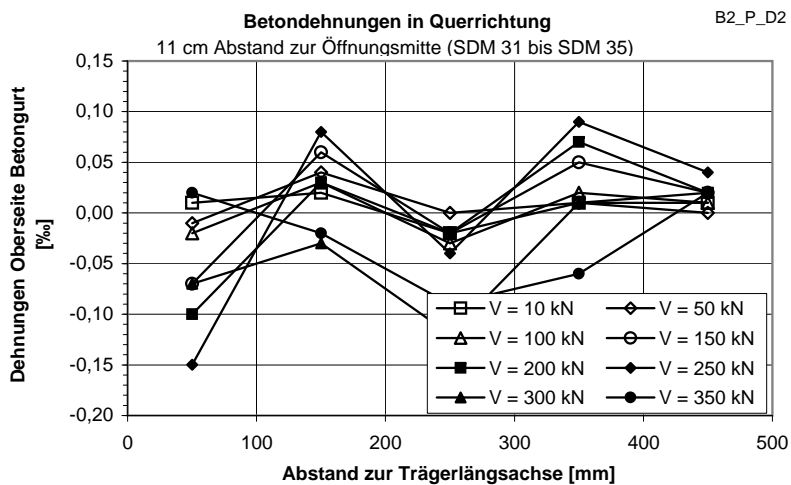
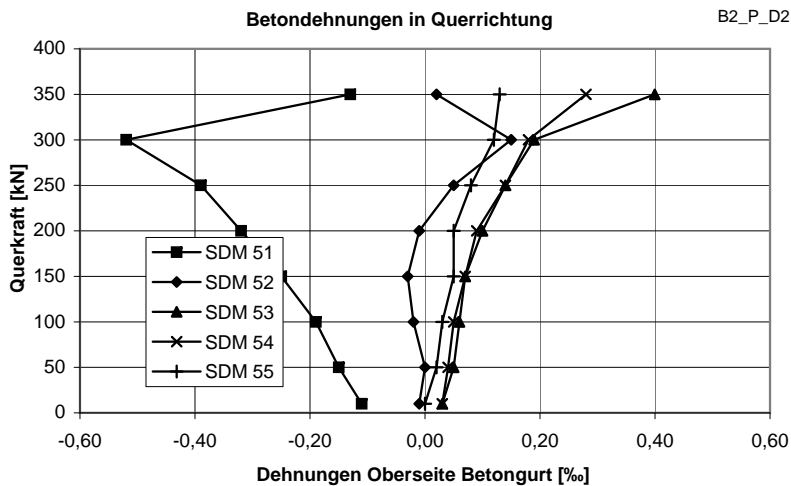


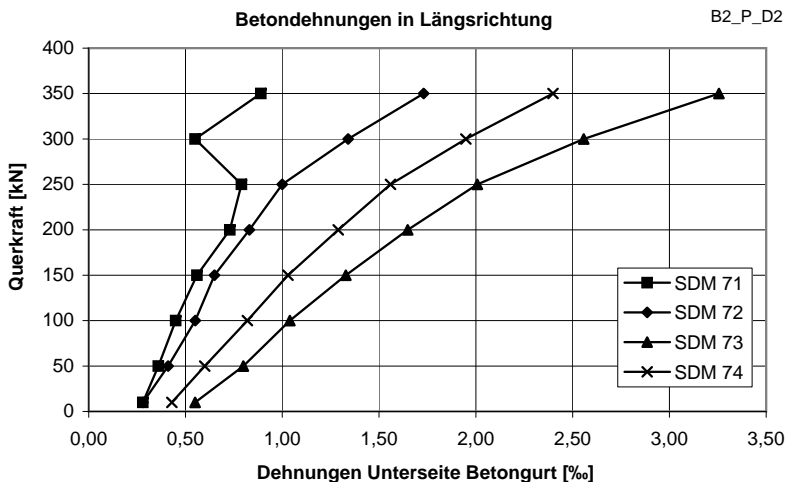
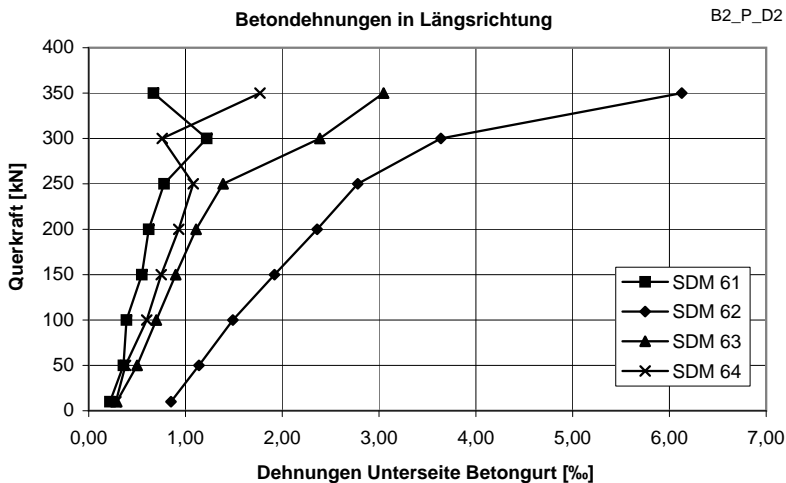
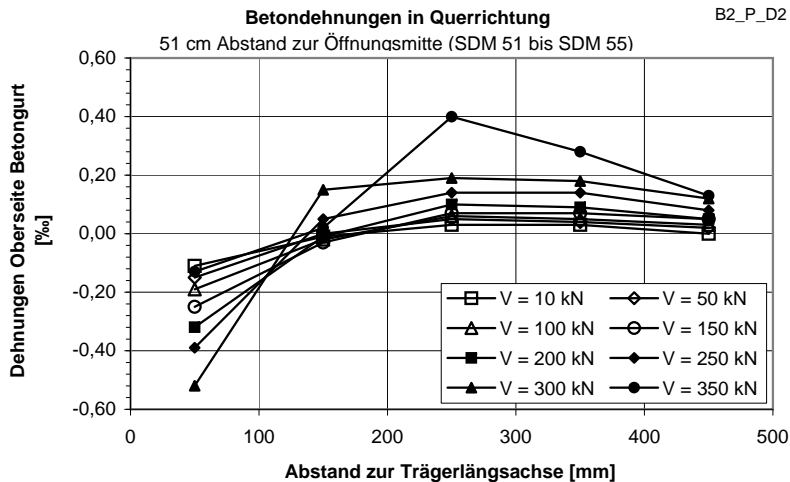
B.17.8. Betondehnungen

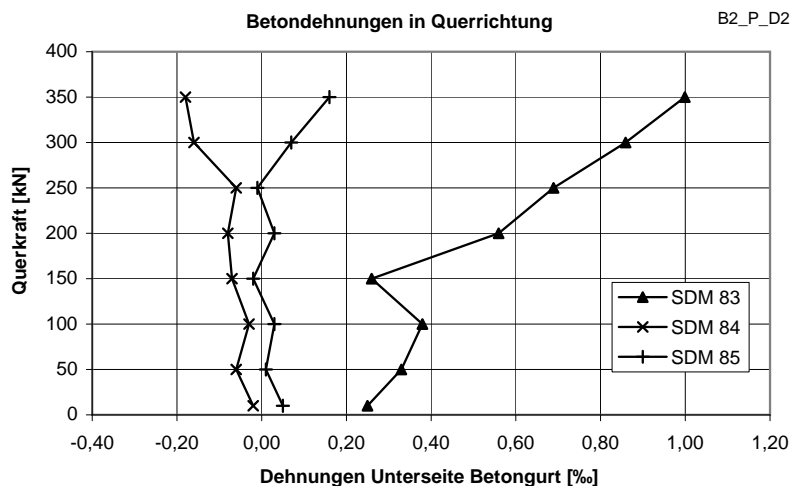
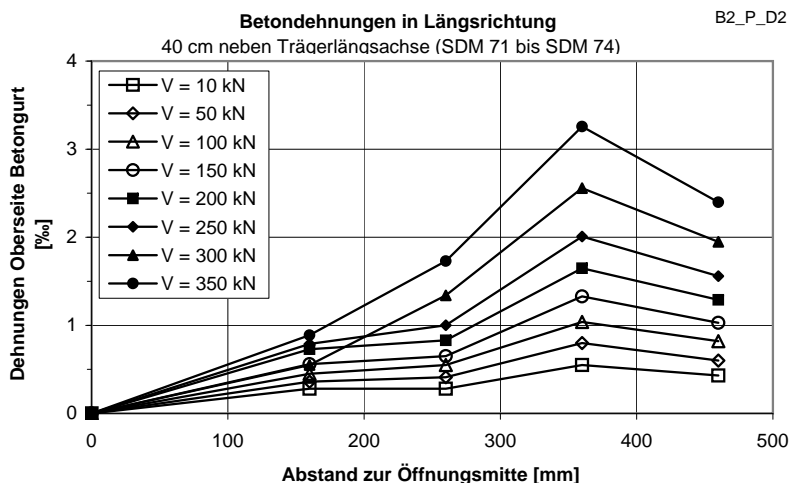
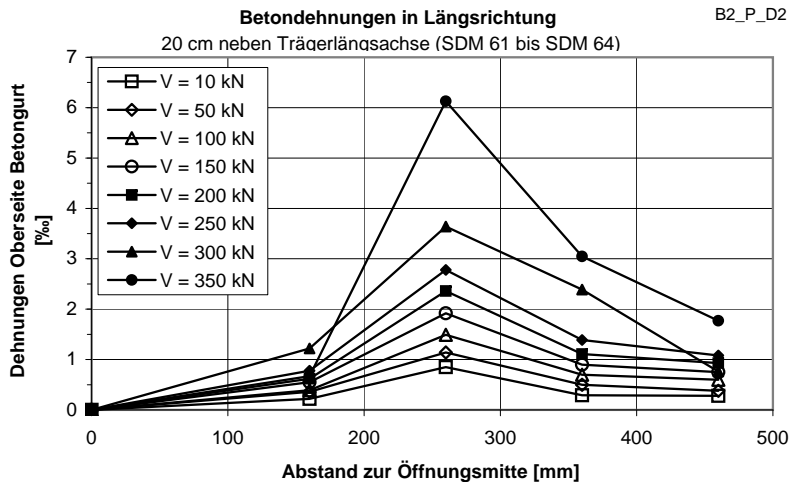


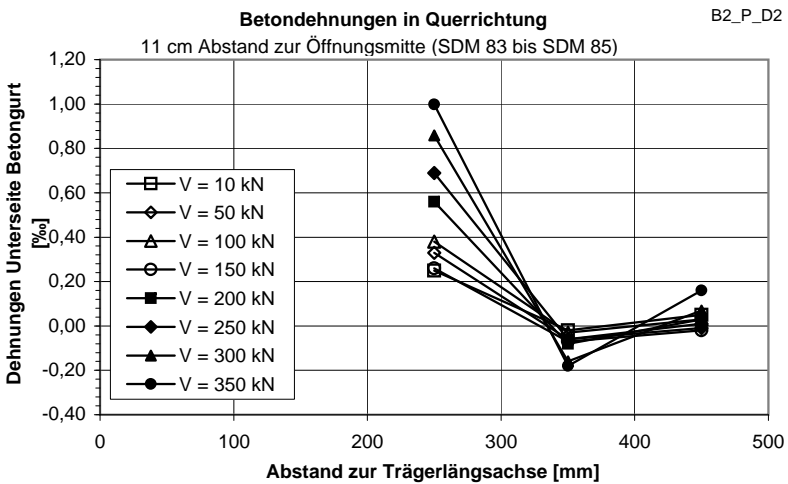
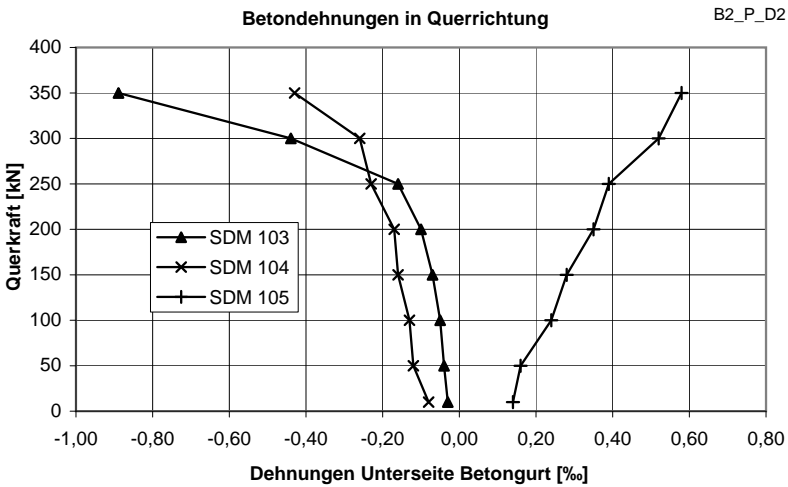
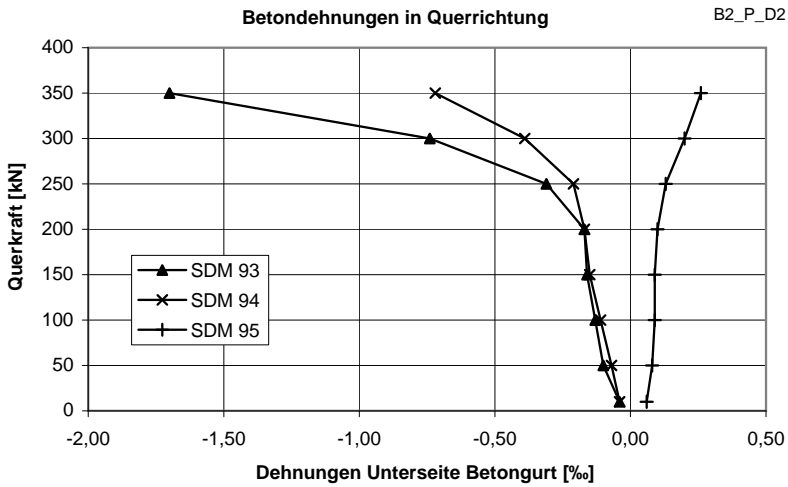


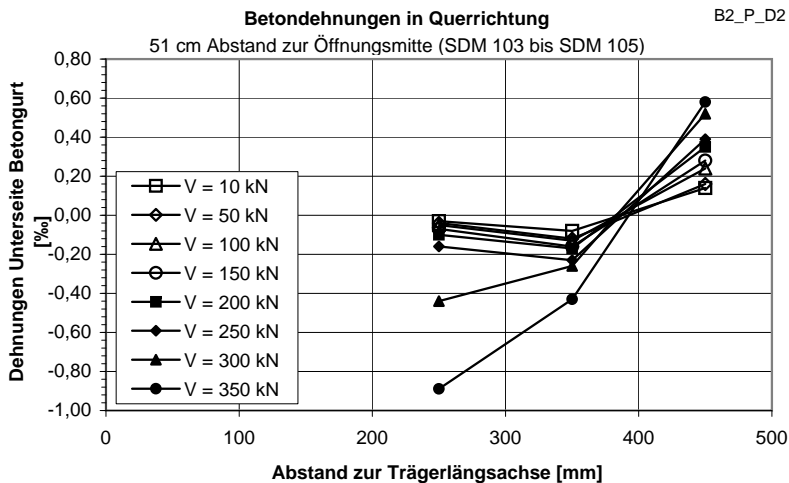
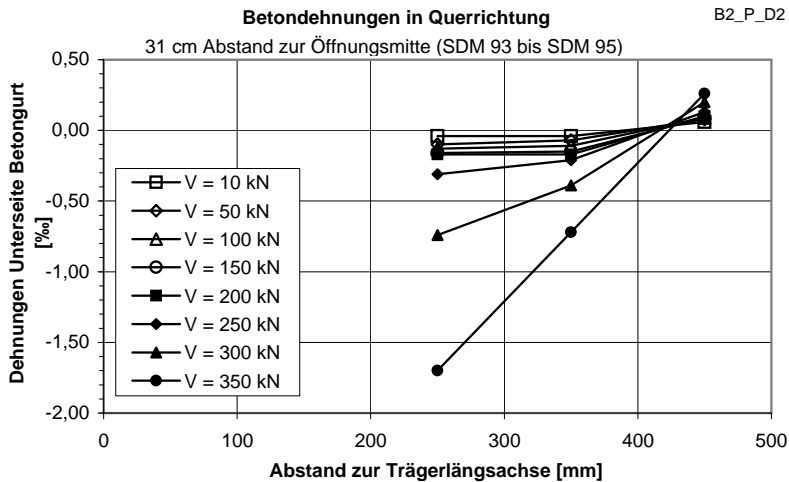






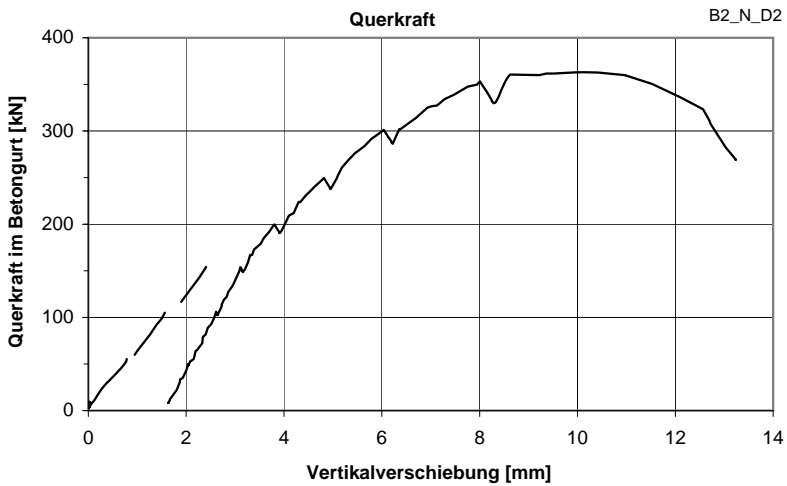
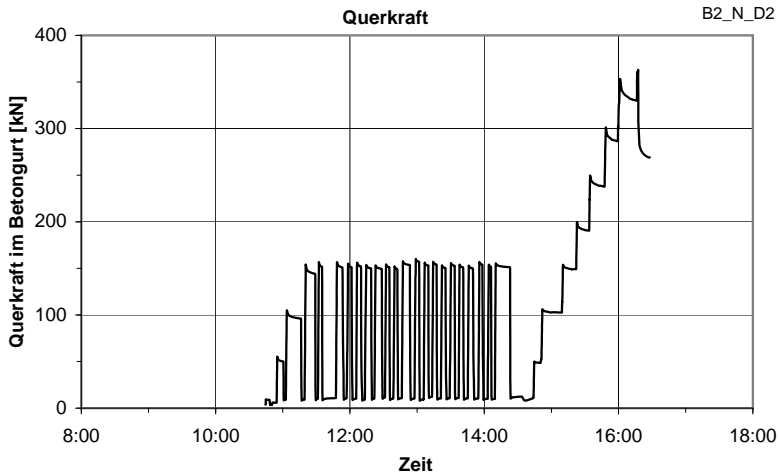


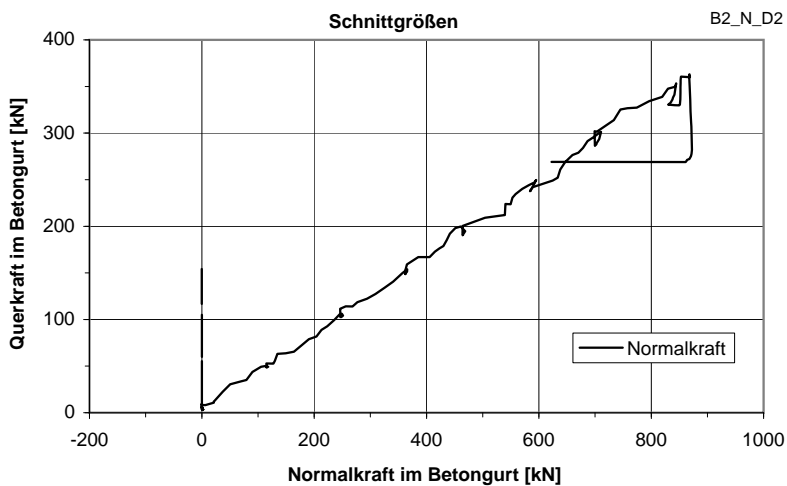
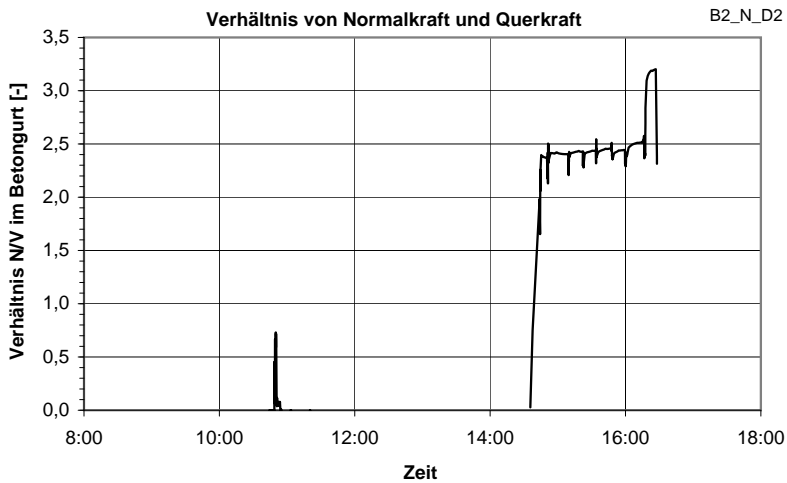
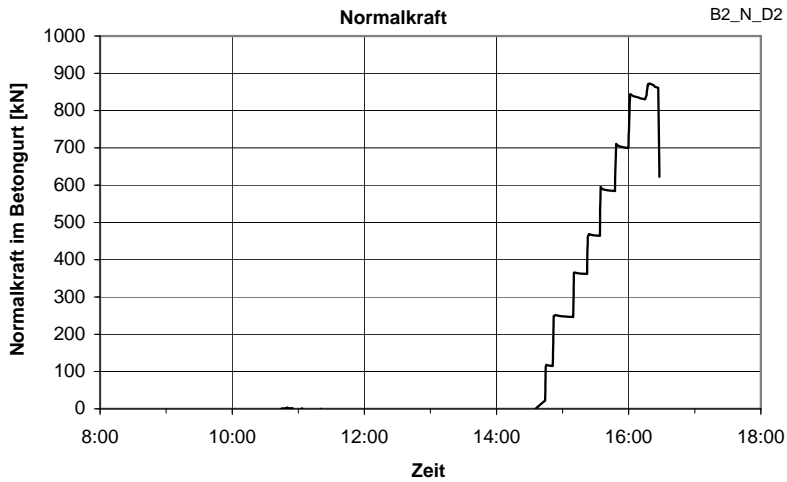


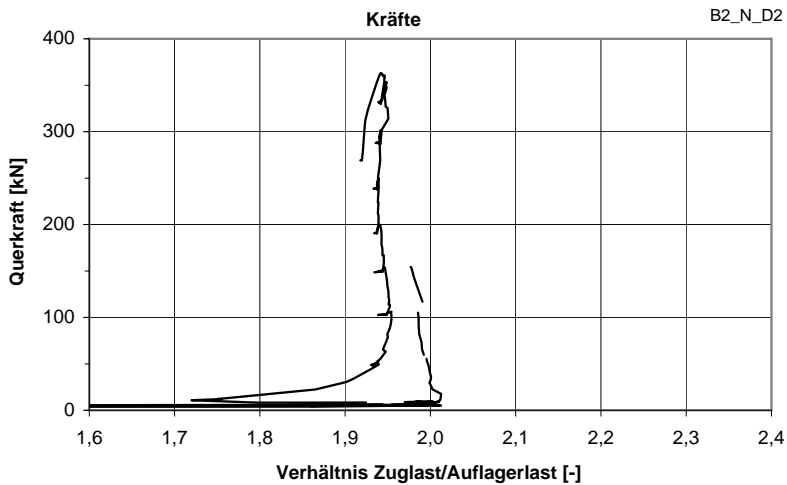
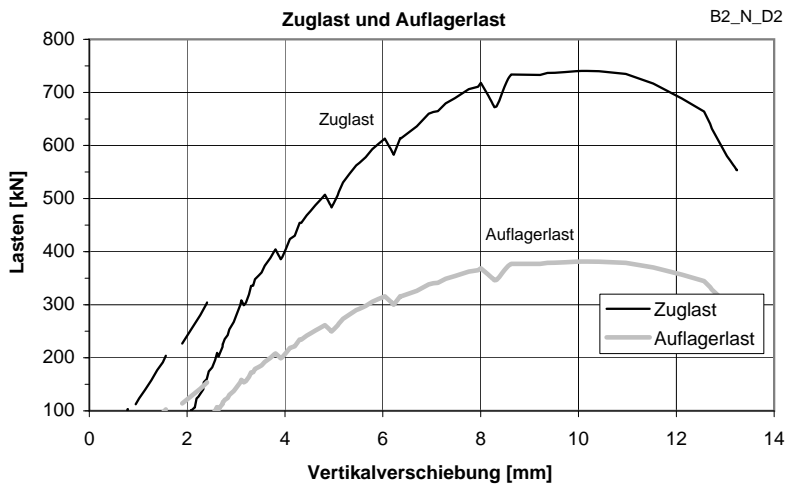


B.18. Versuch B2_N_D2

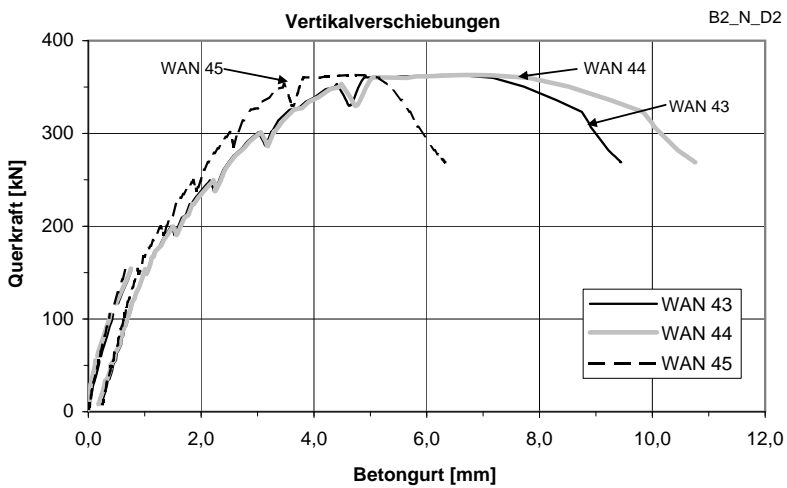
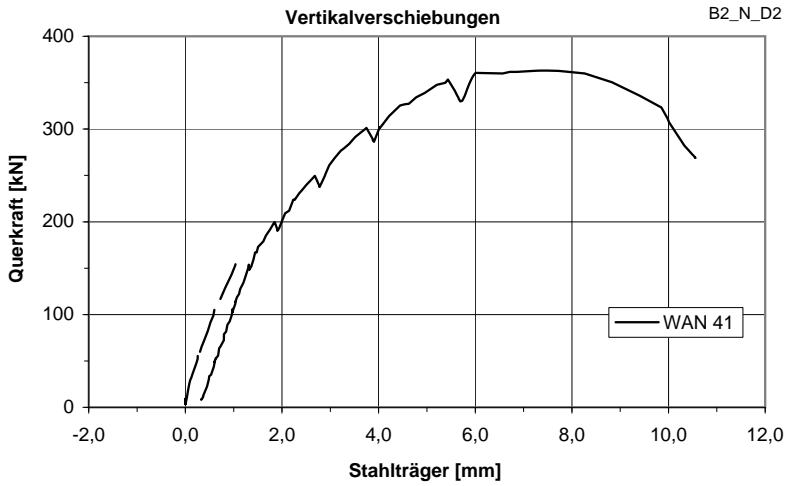
B.18.1. Kräfte

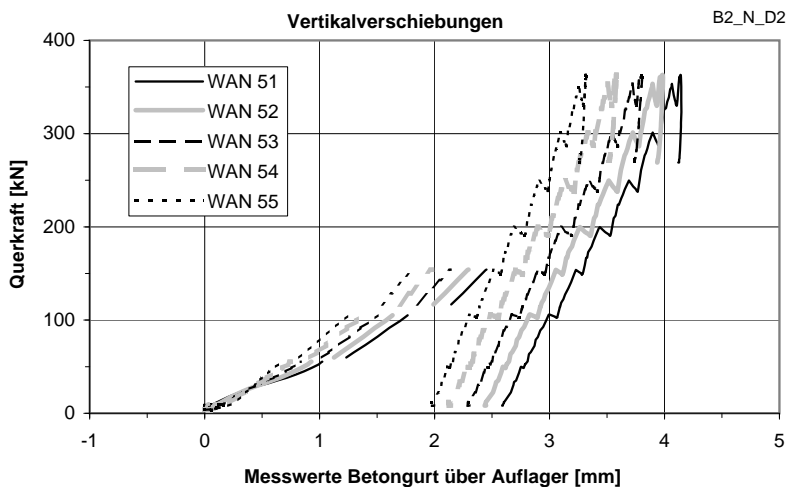
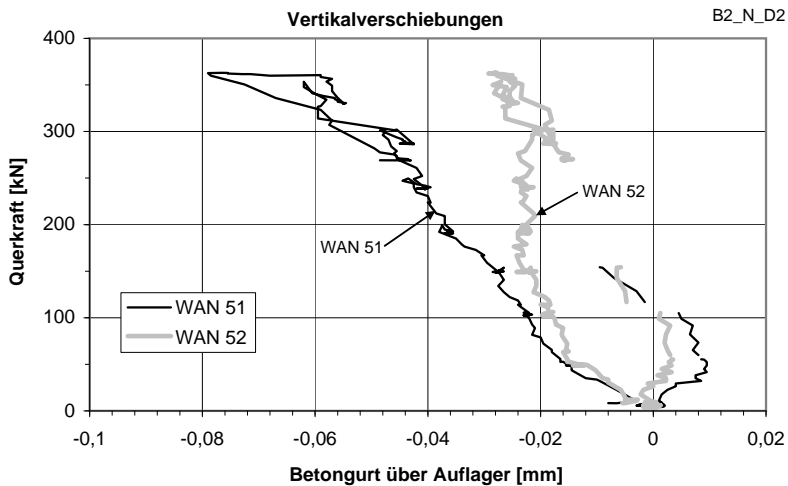
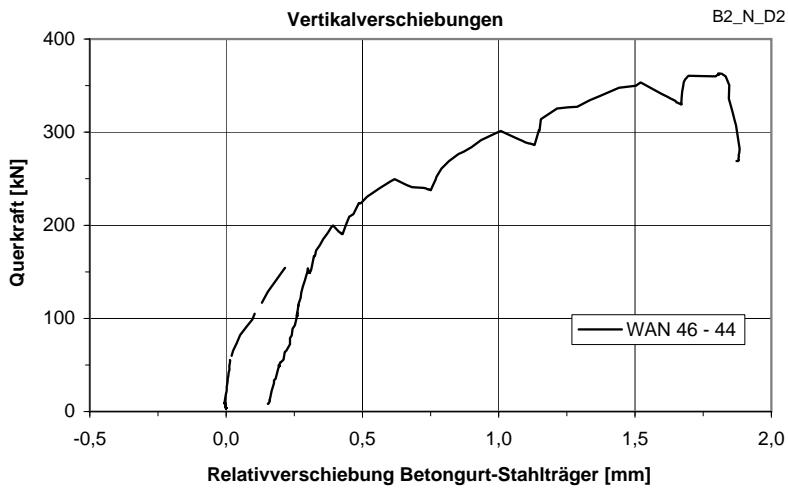




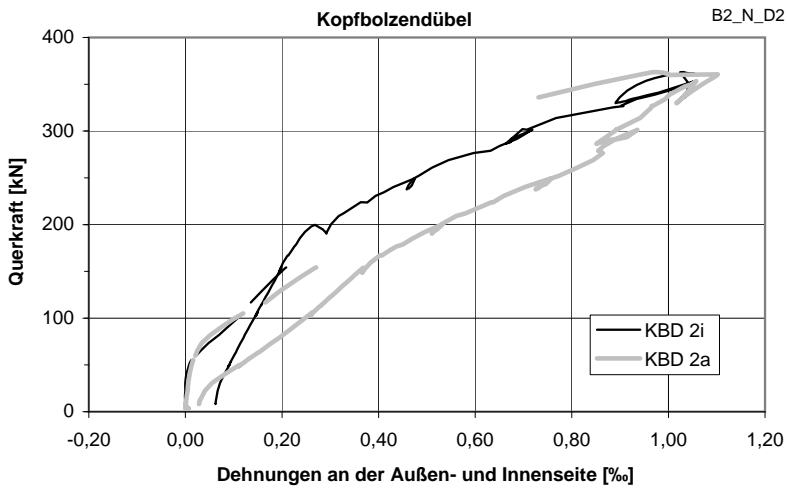
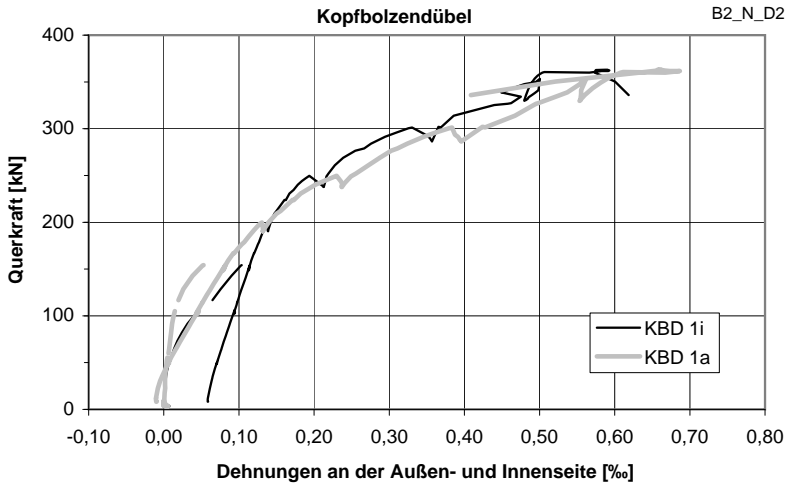


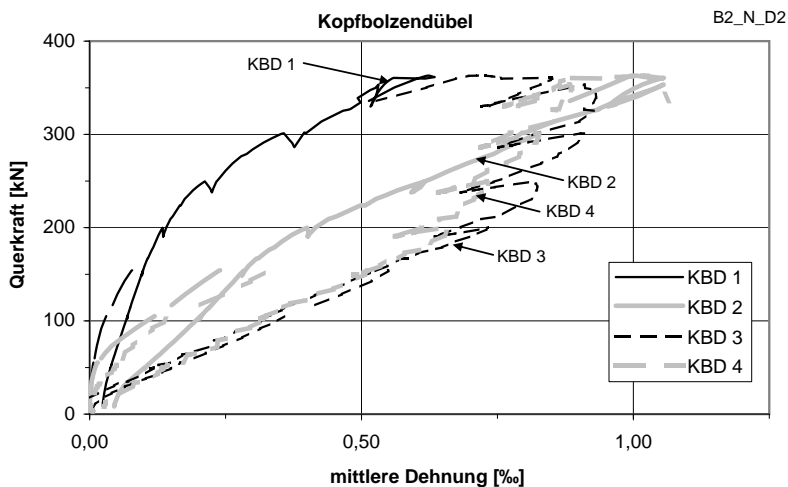
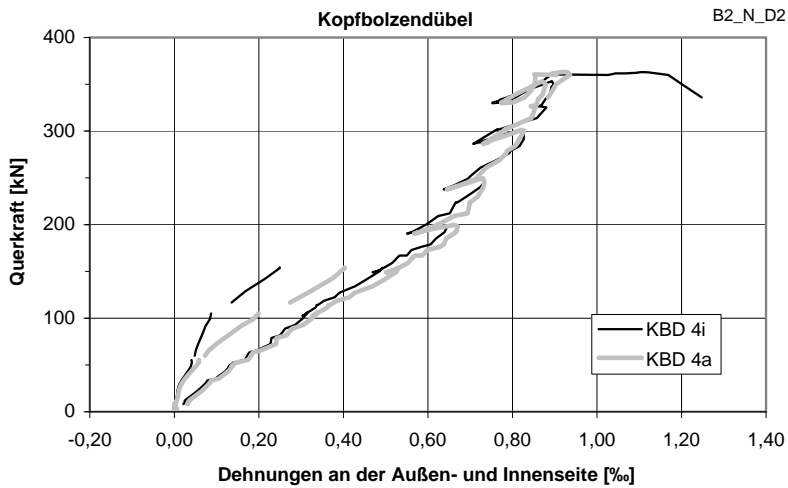
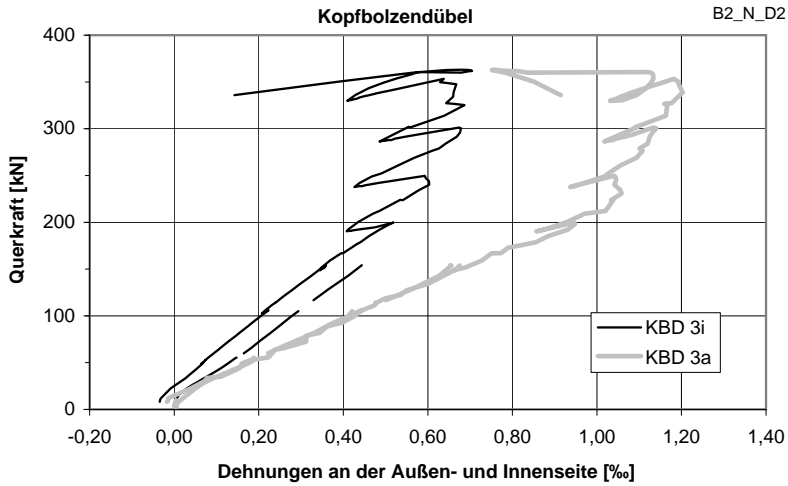
B.18.2. Verformungen

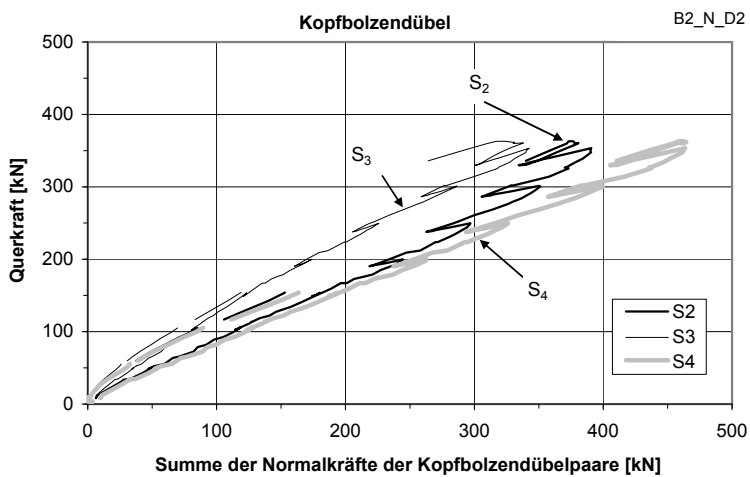
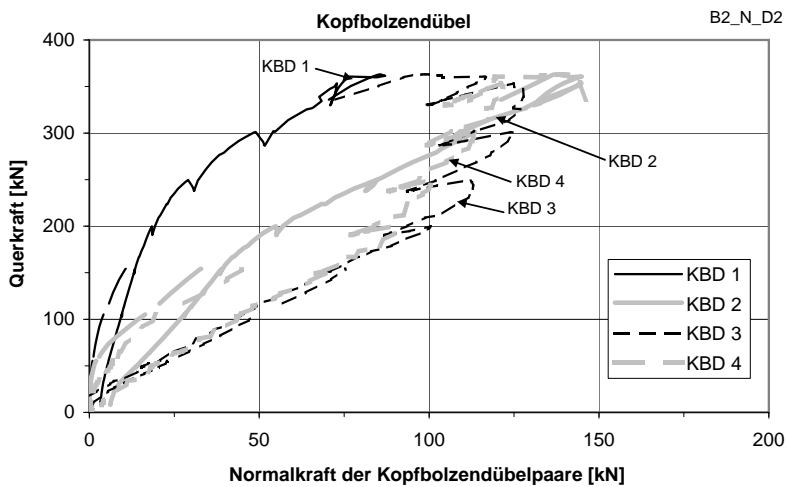
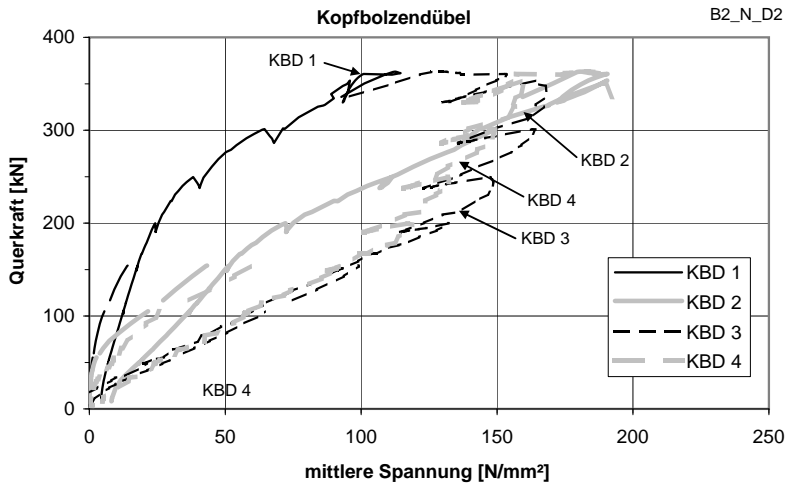




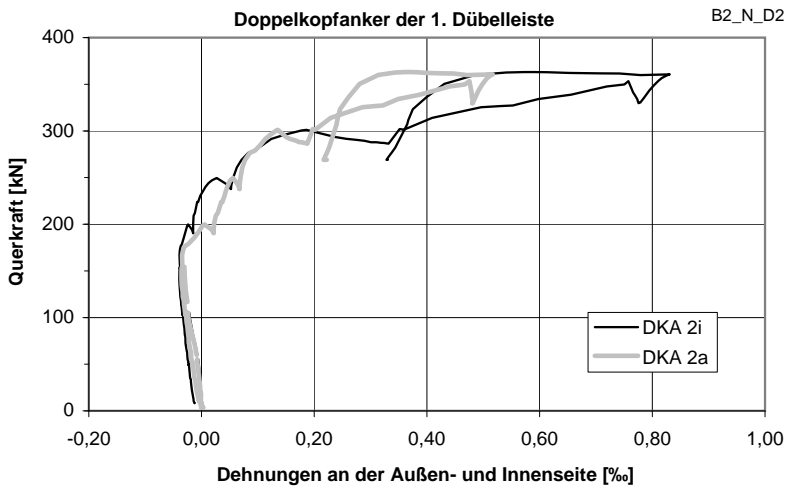
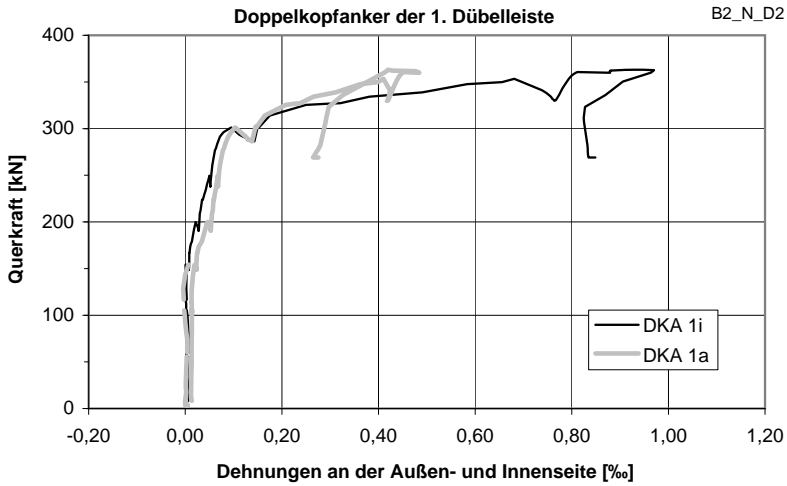
B.18.3. Kopfbolzendübel

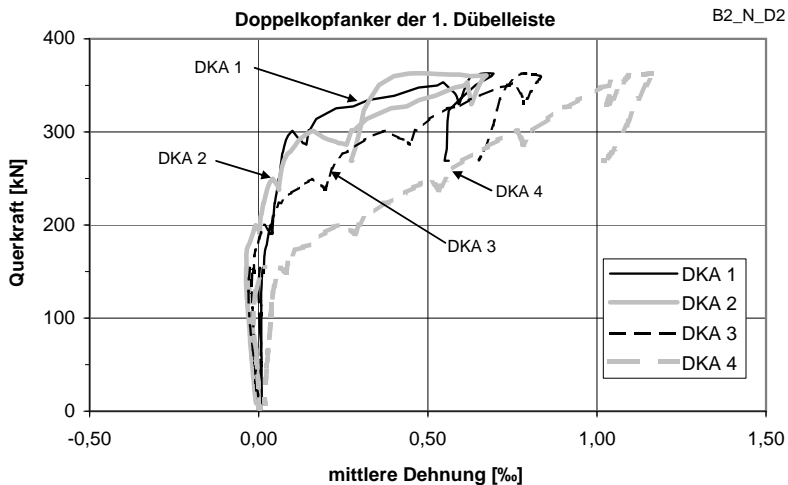
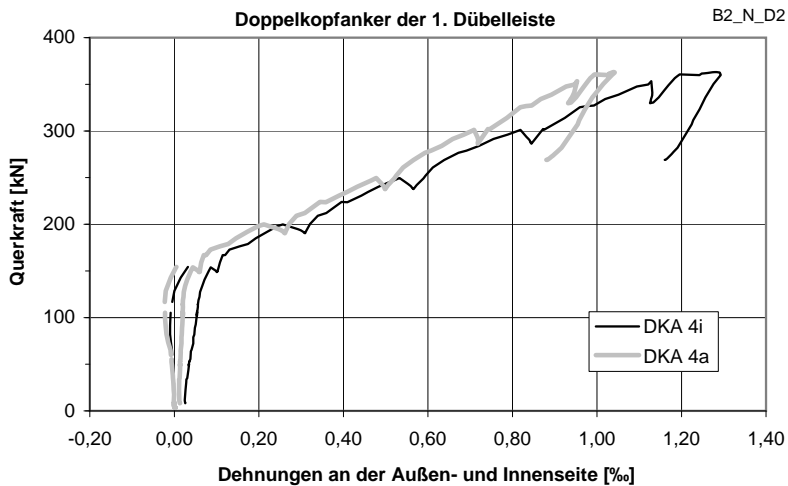
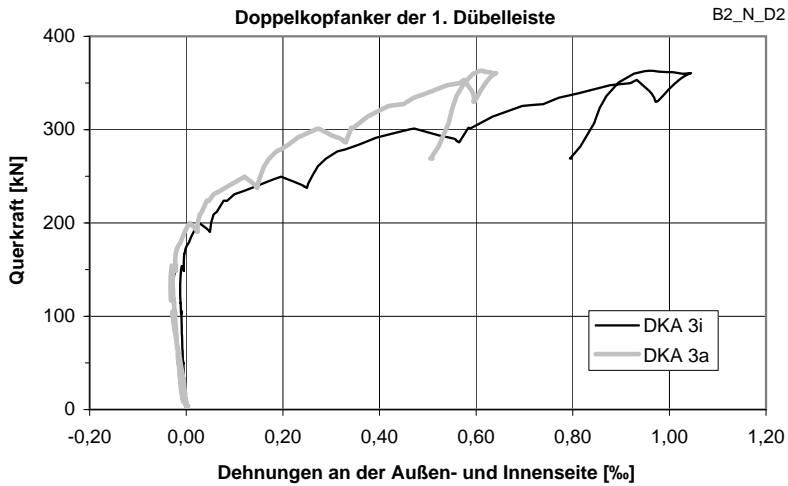


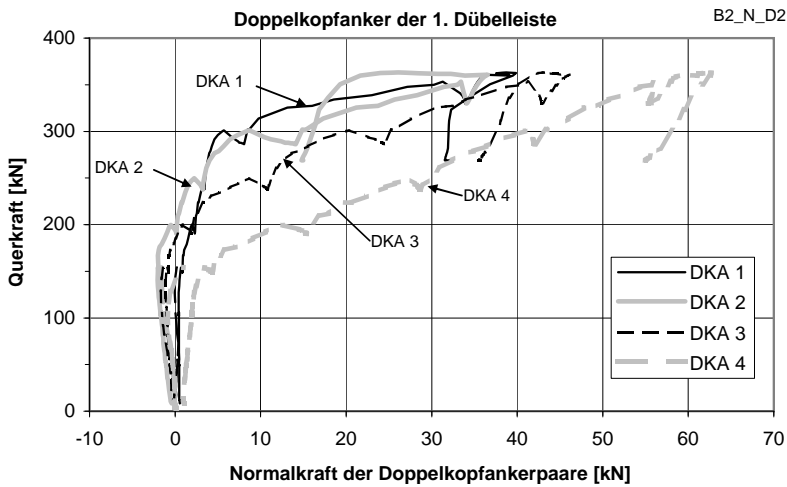
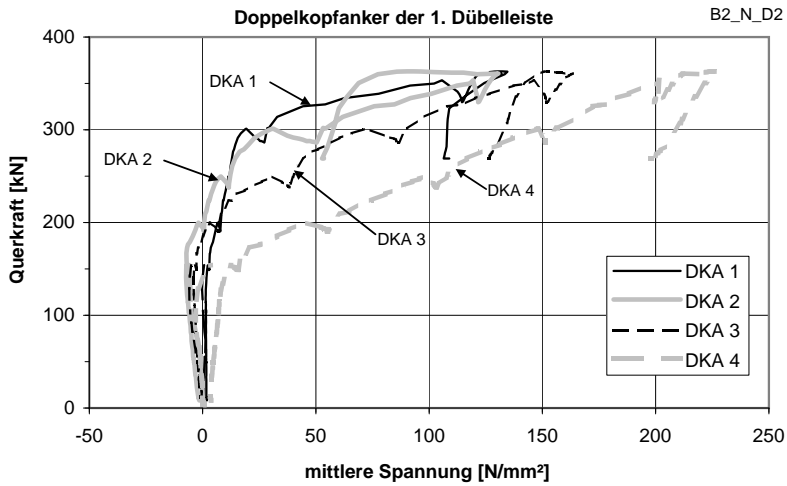




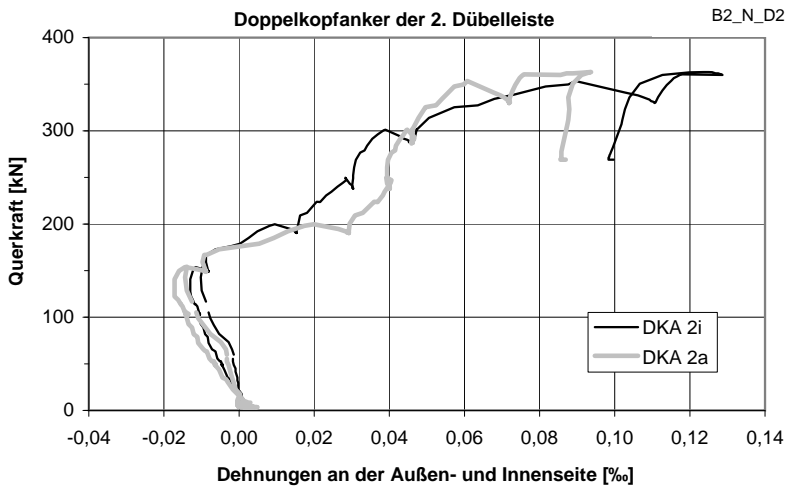
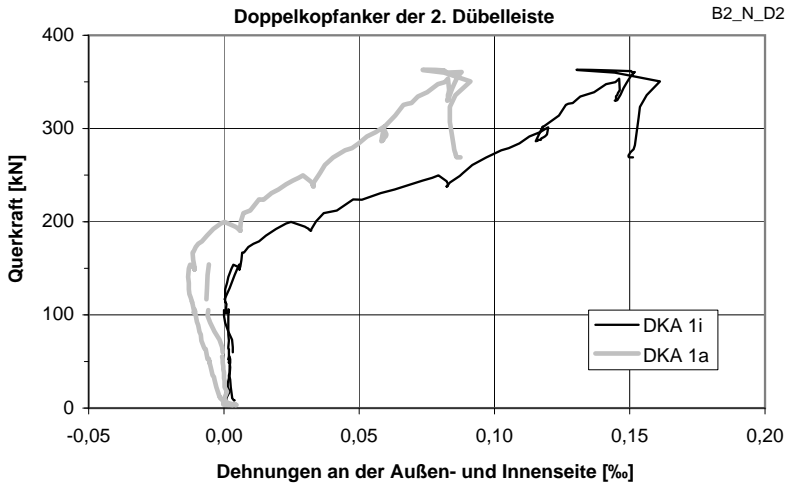
B.18.4. Doppelkopfkanker der ersten Dübelleiste

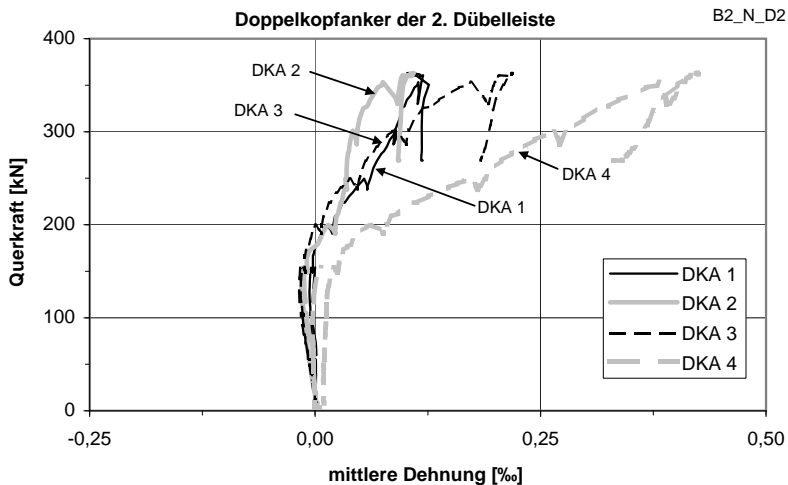
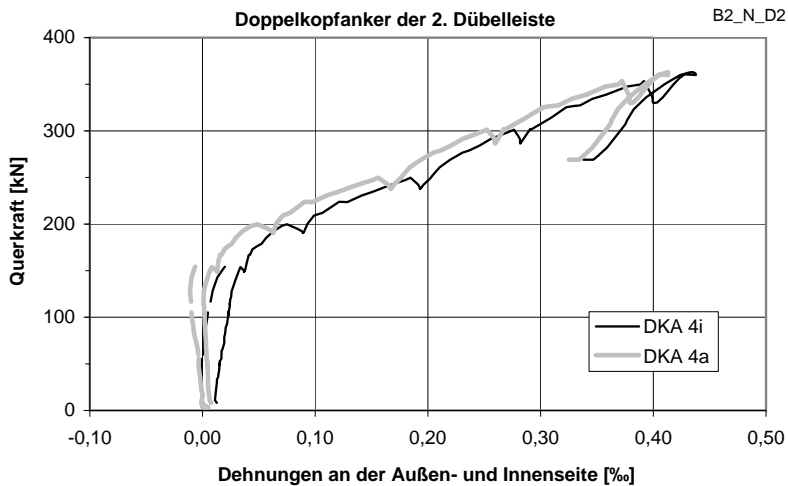
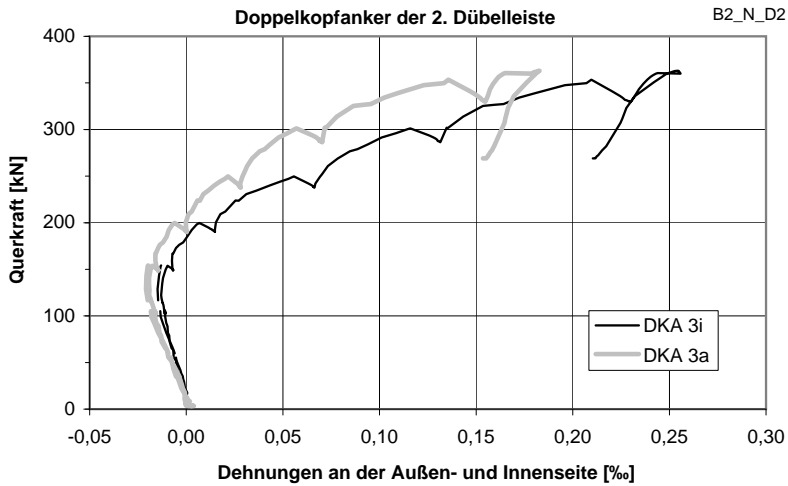


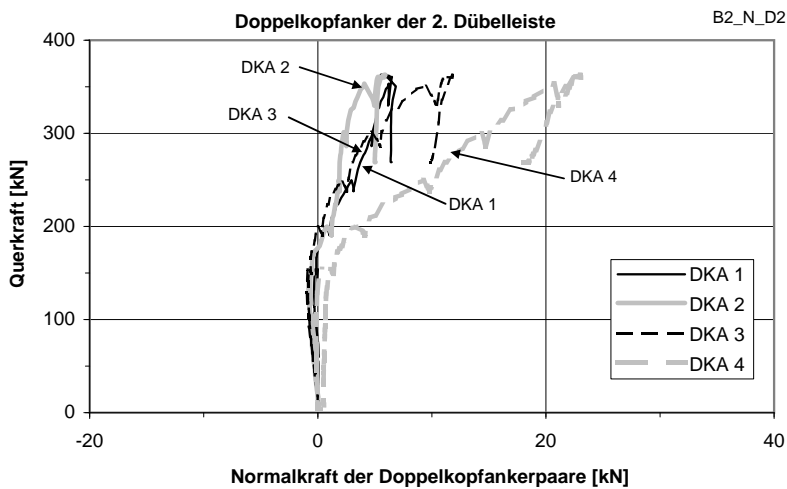
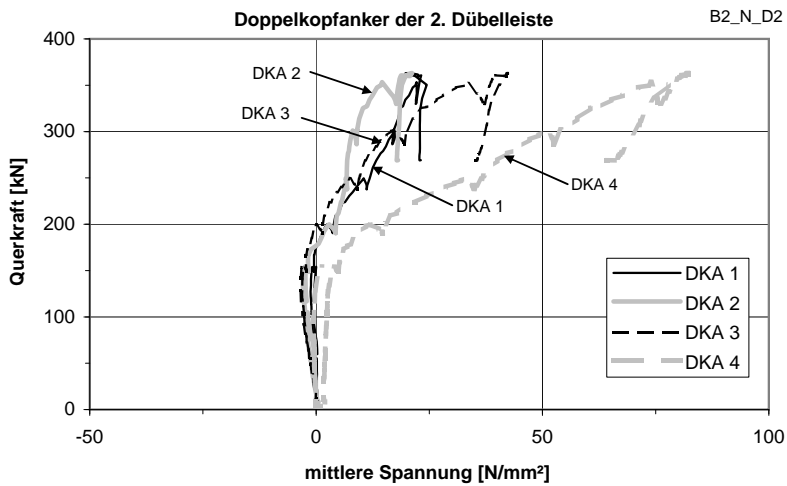




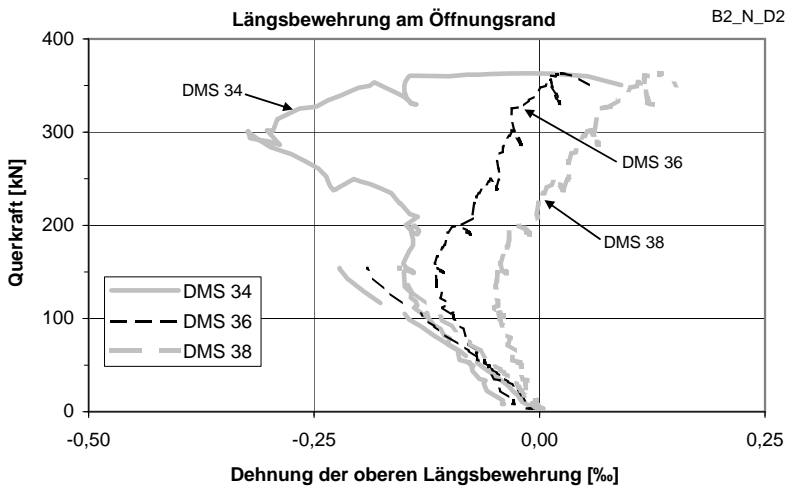
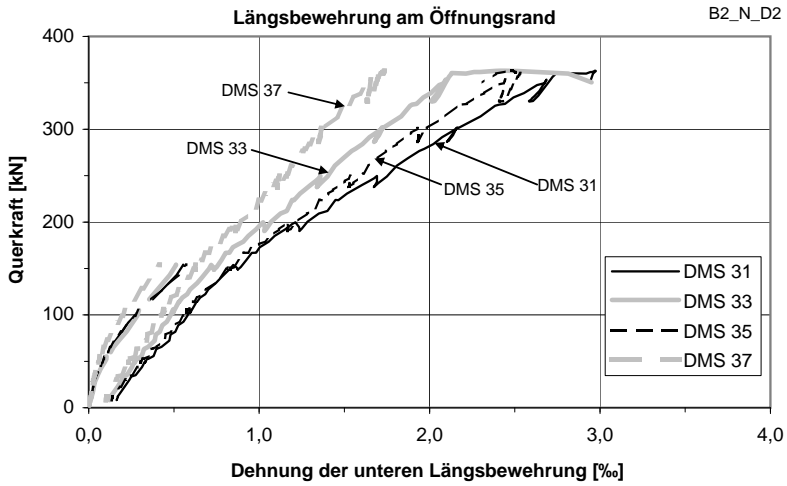
B.18.5. Doppelkopfkanker der zweiten Dübelleiste

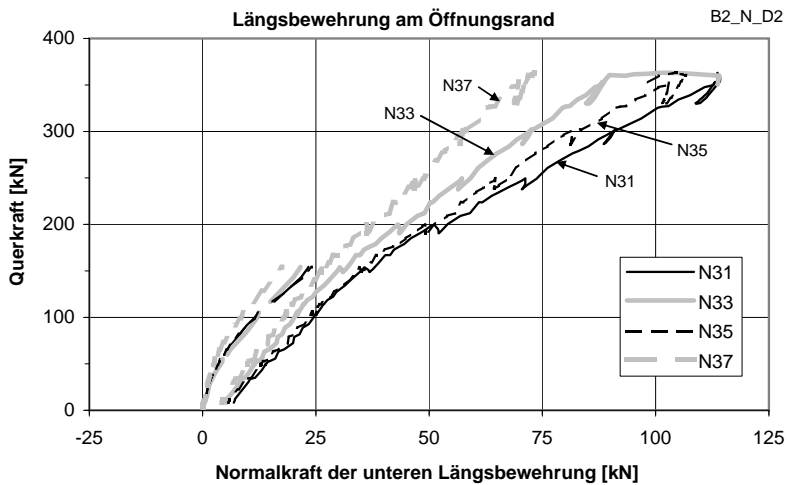
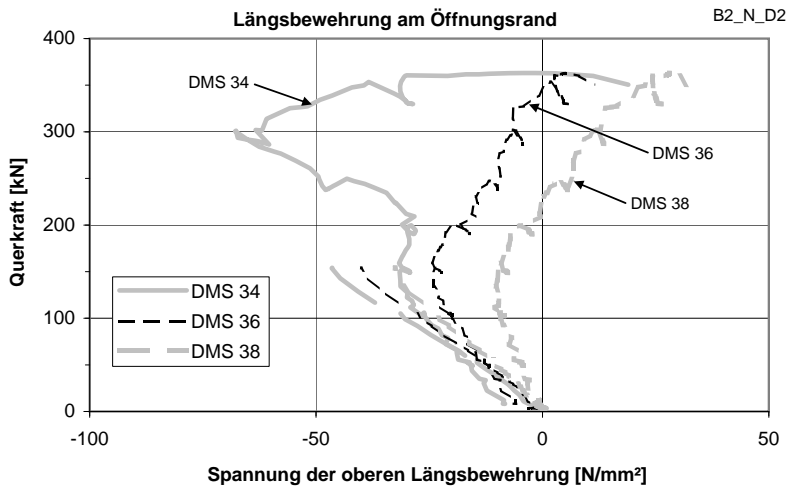
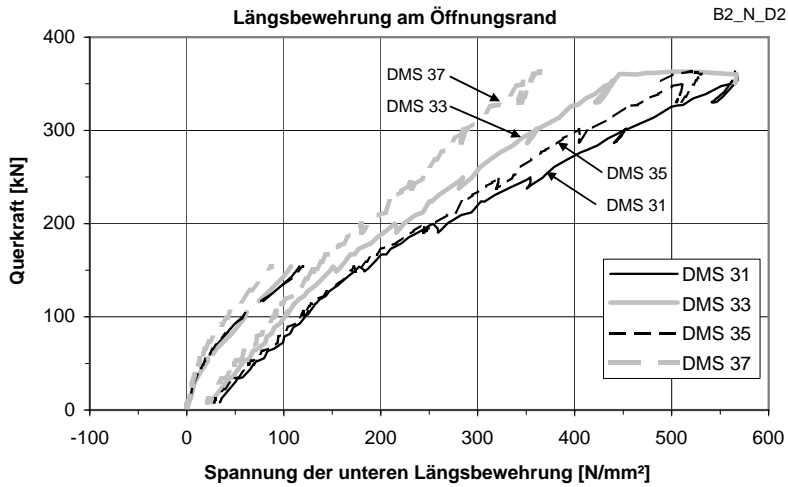


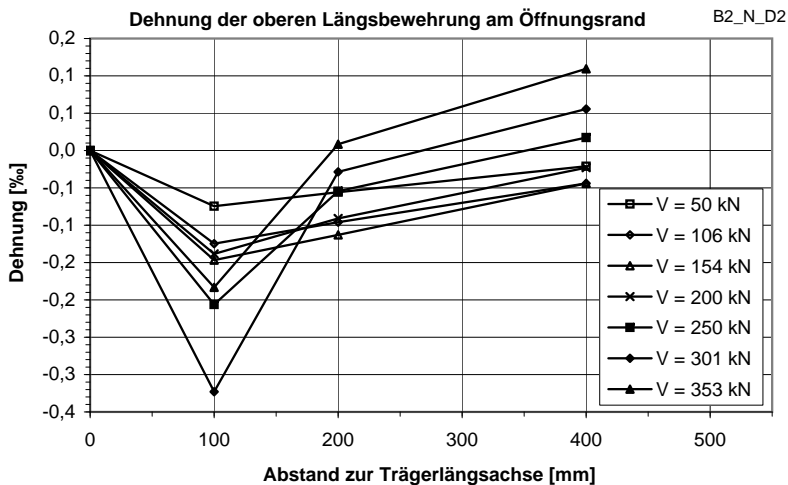
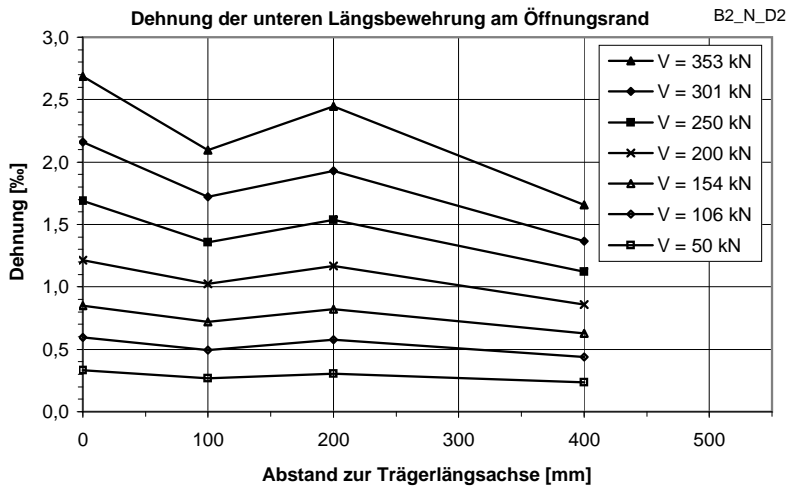
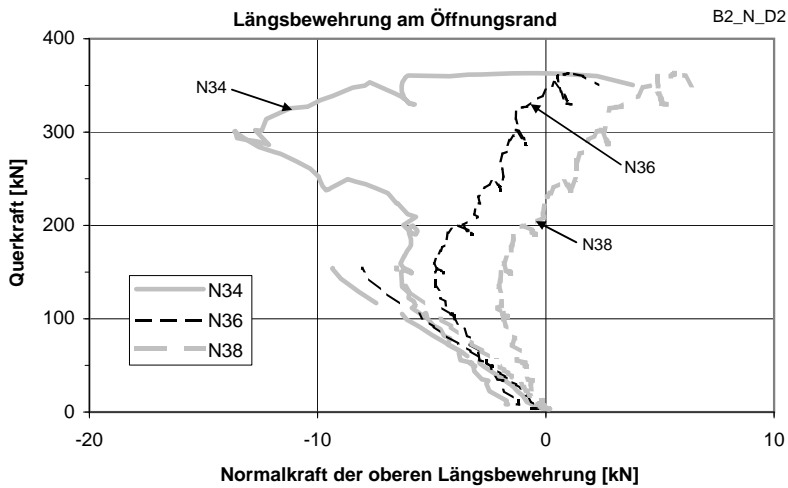


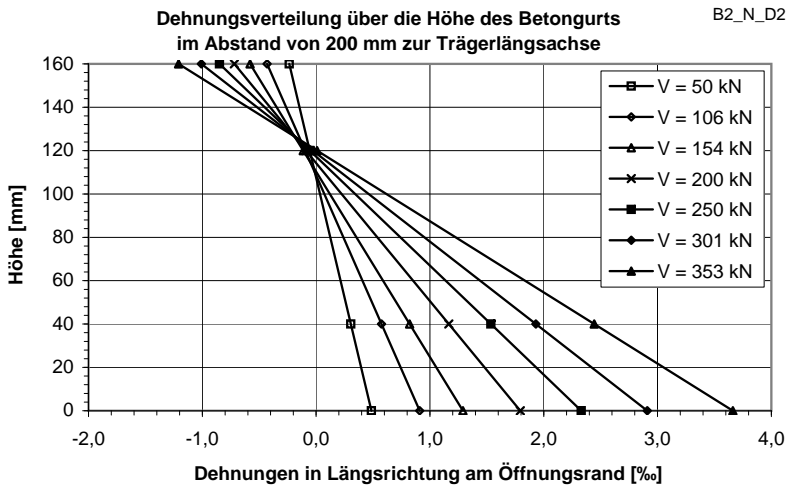
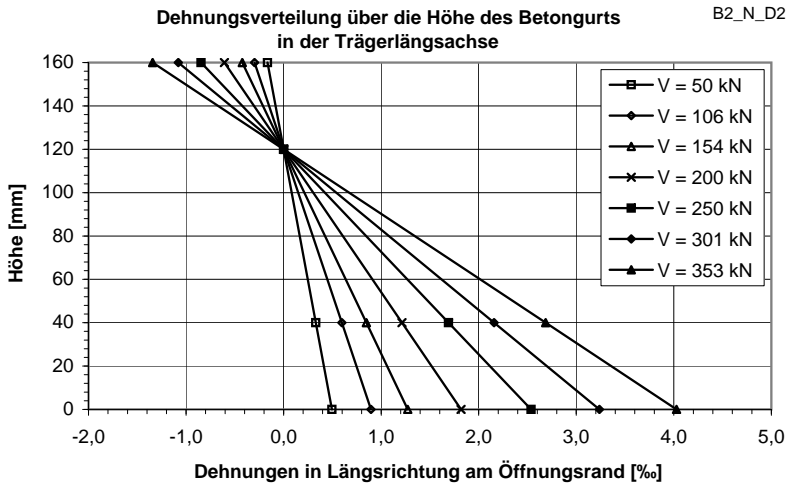


B.18.6. Längsbewehrung

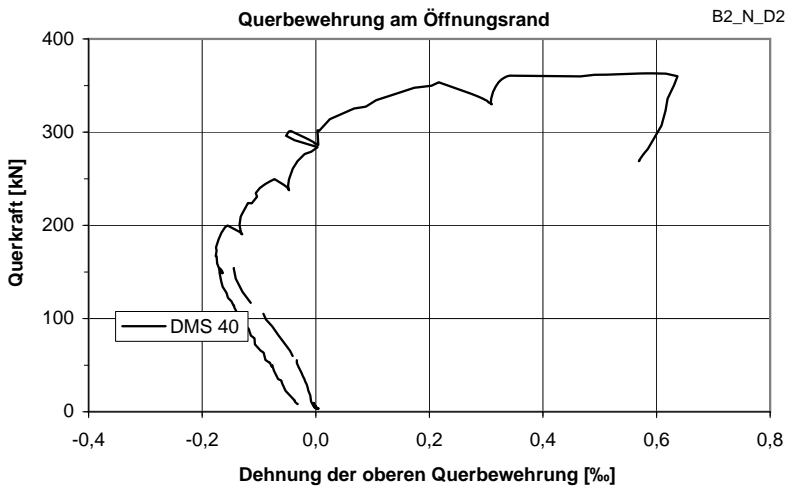
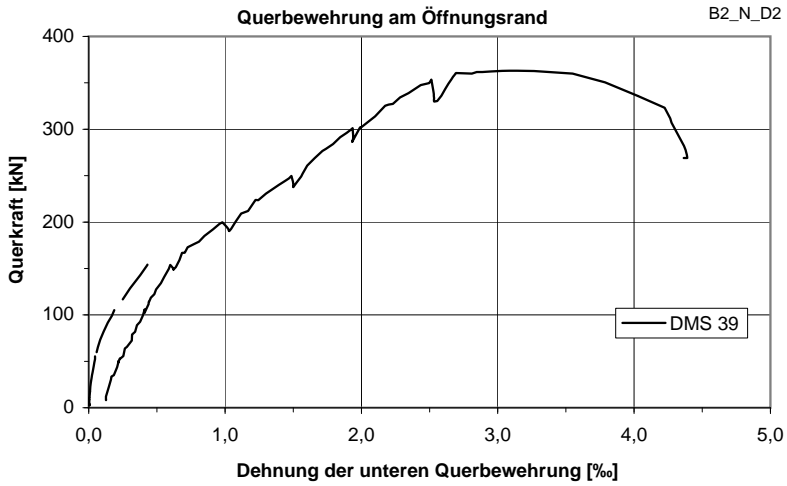


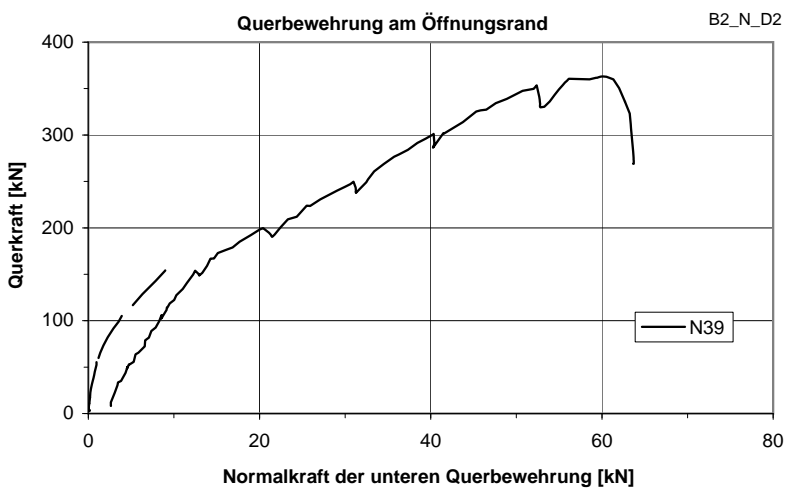
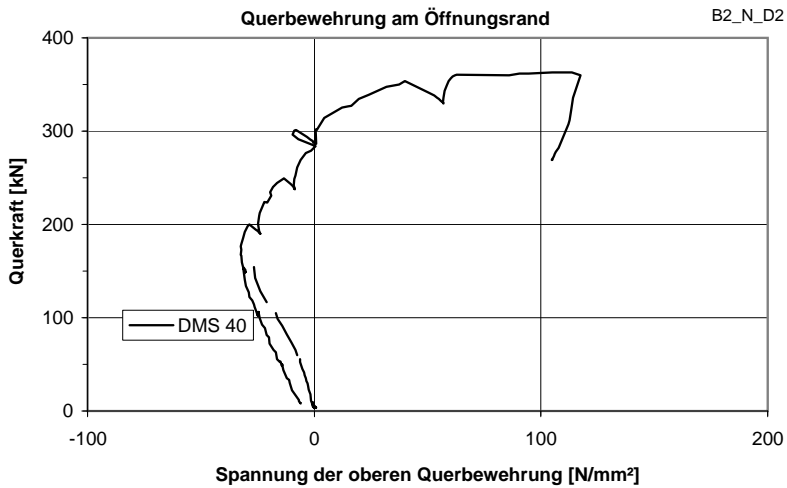
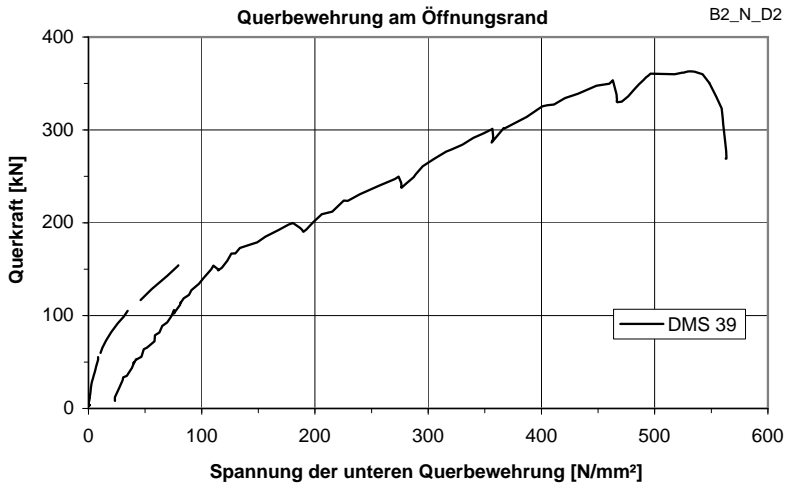


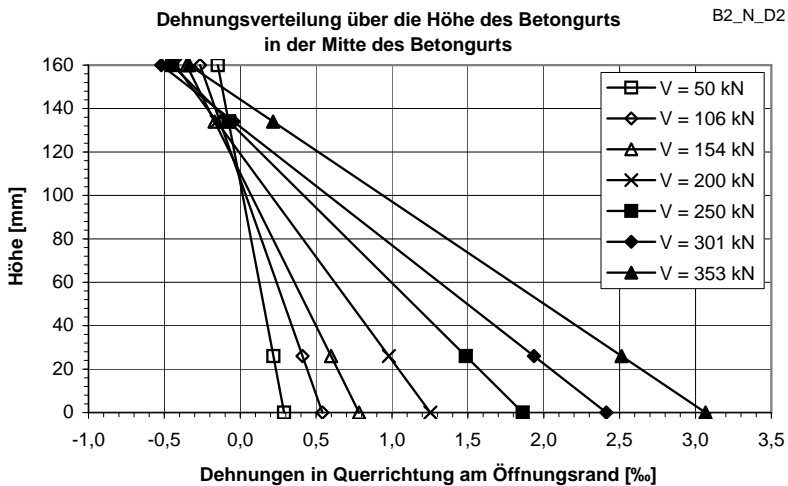
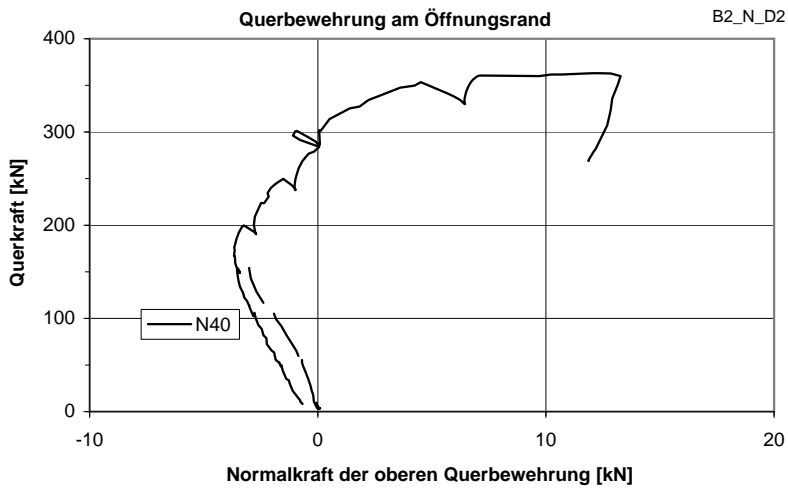




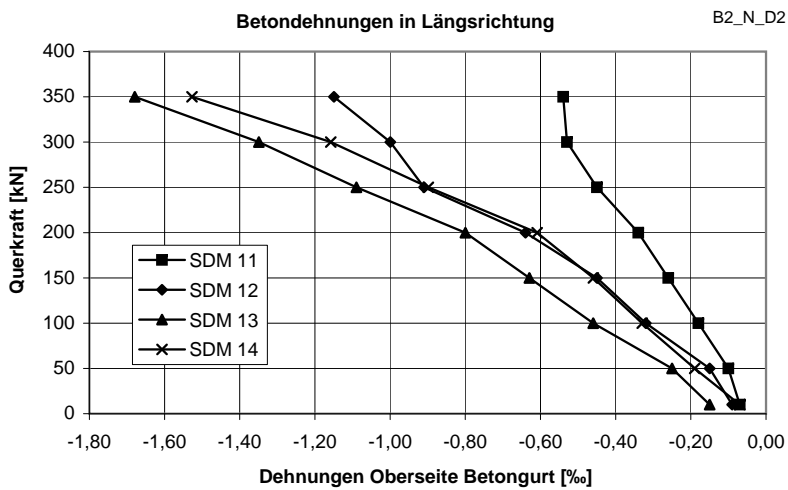
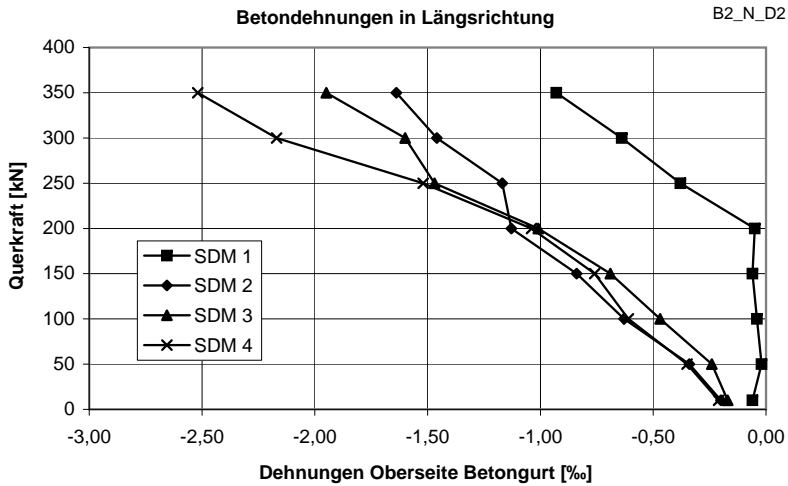
B.18.7. Querbewehrung

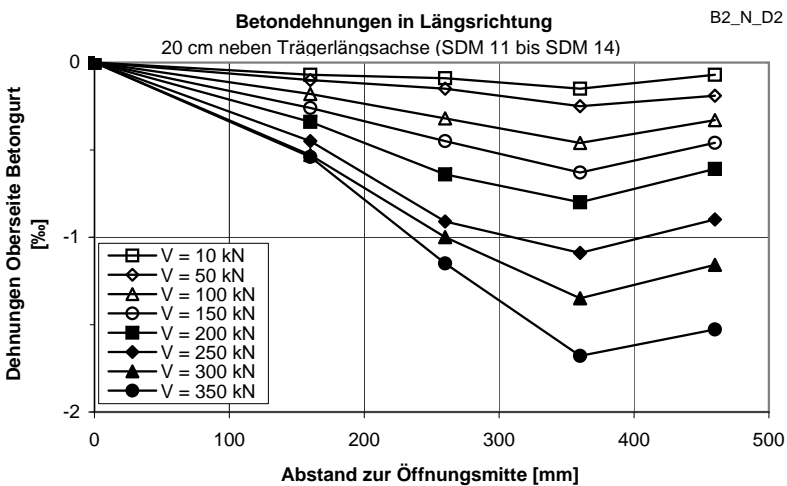
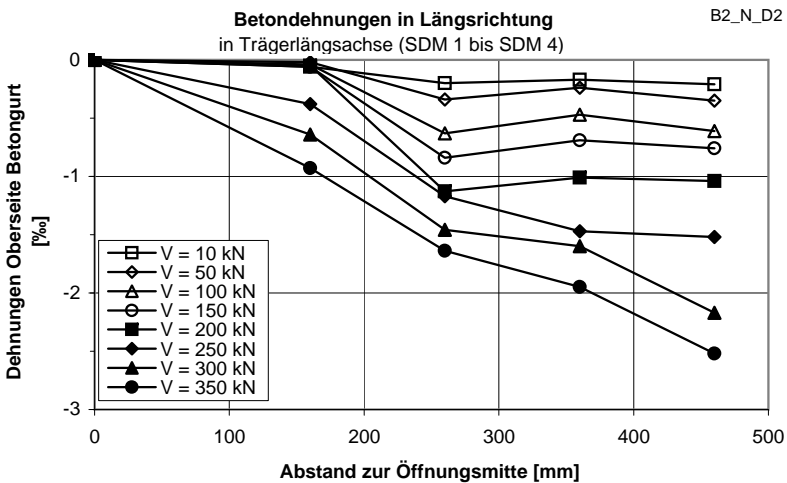
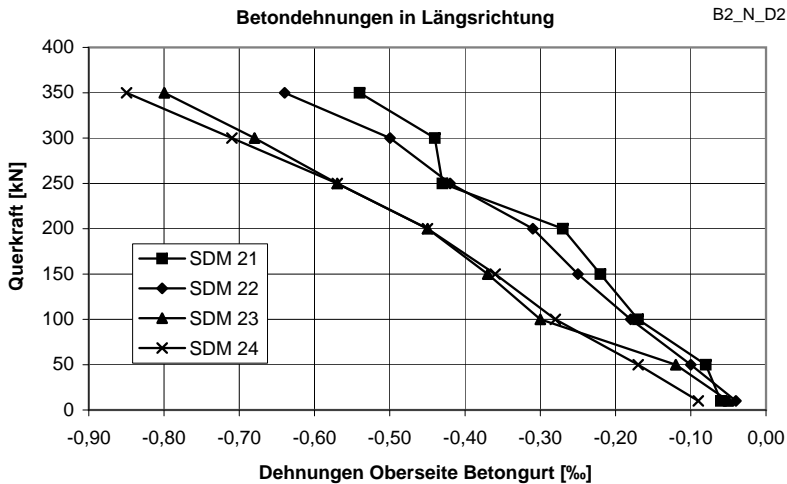


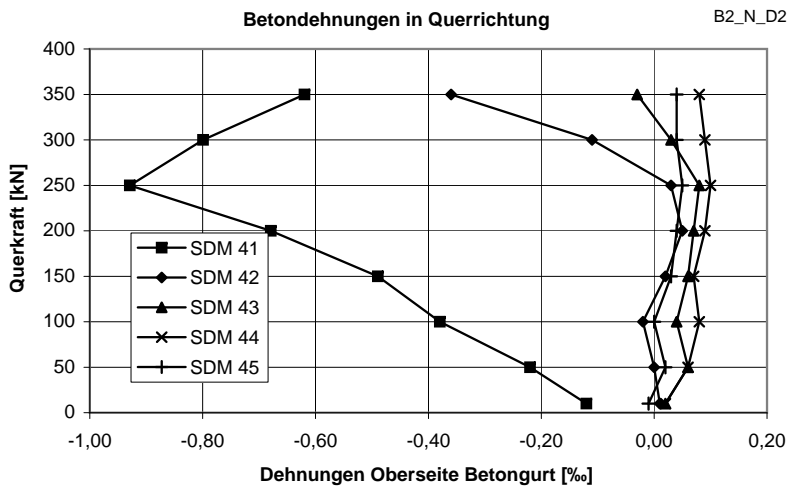
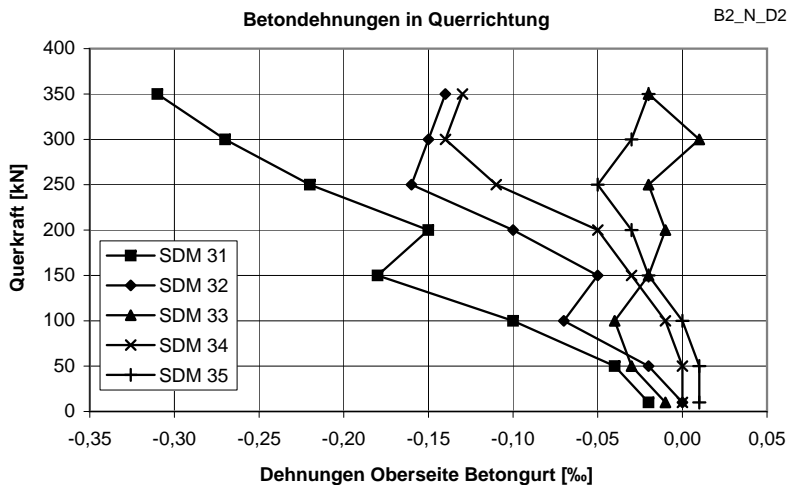
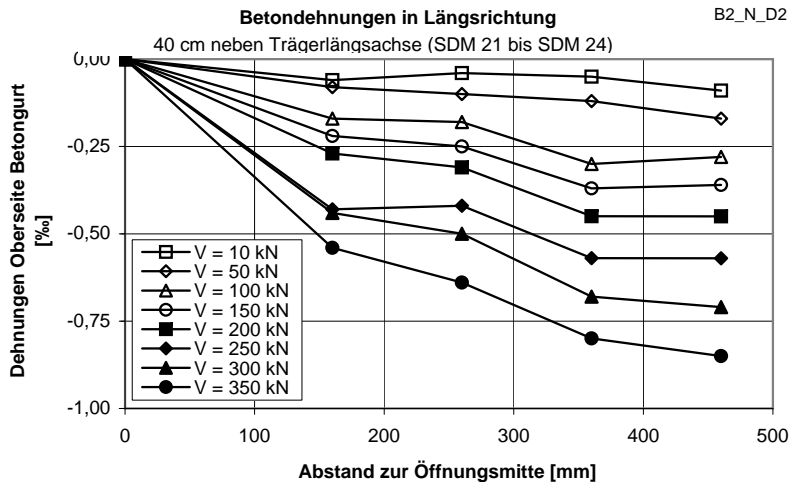


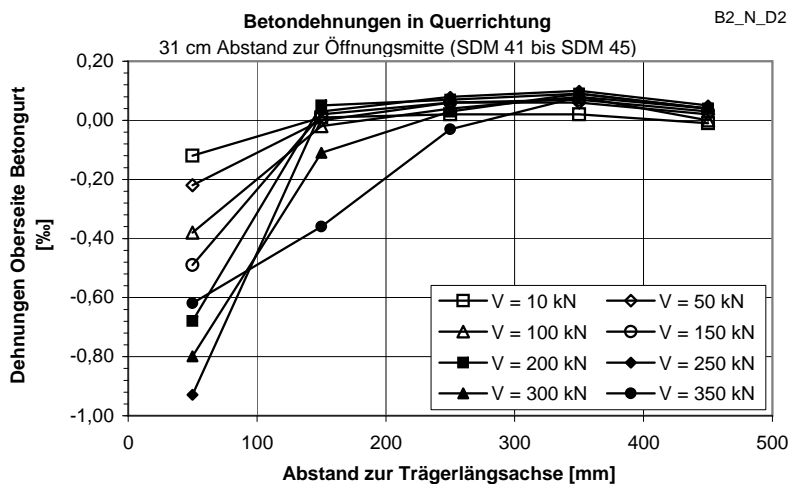
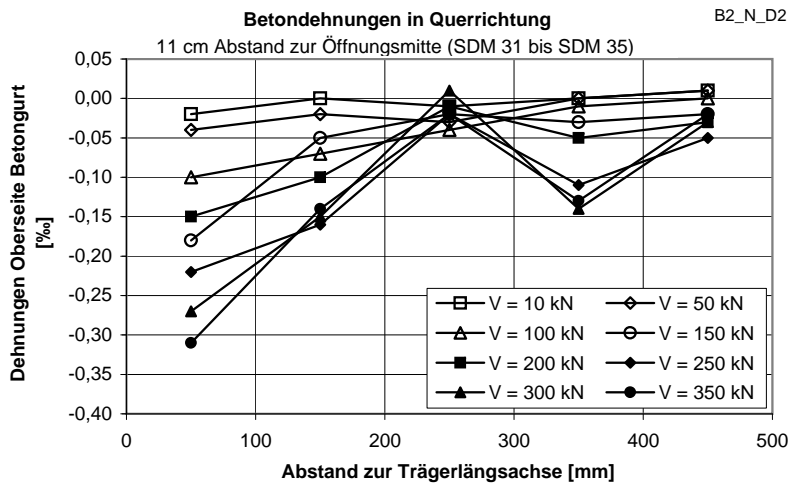
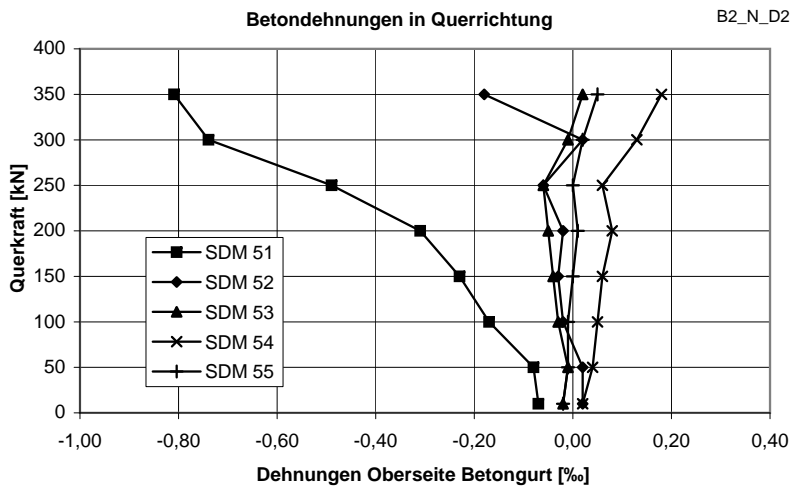


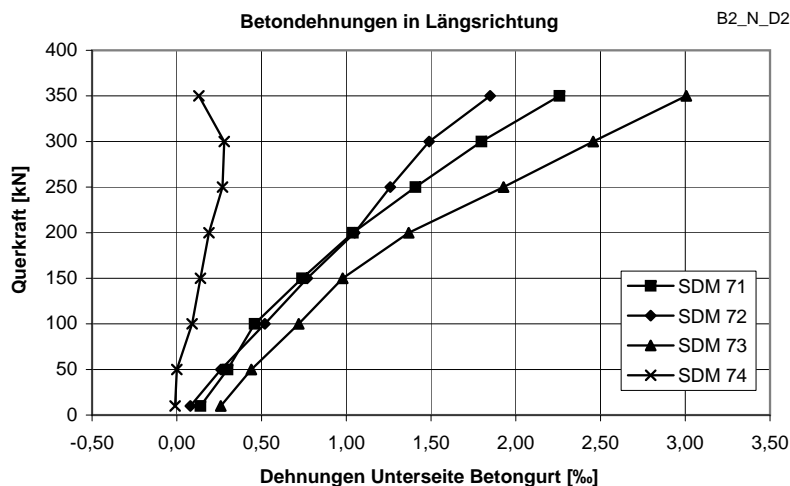
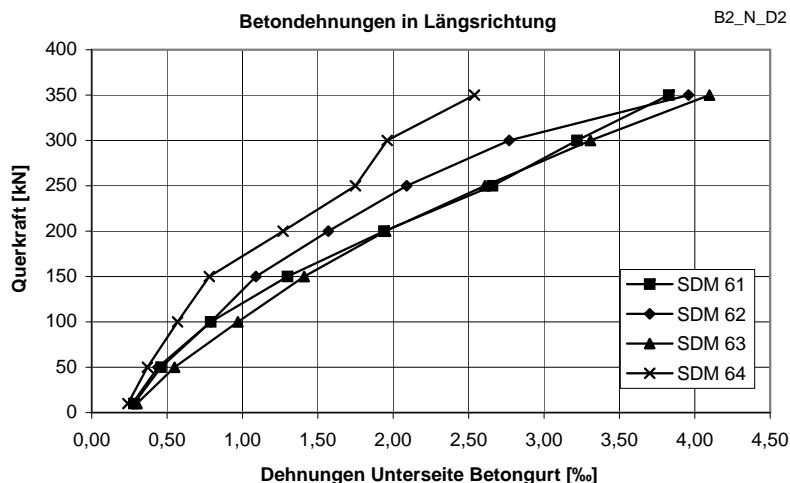
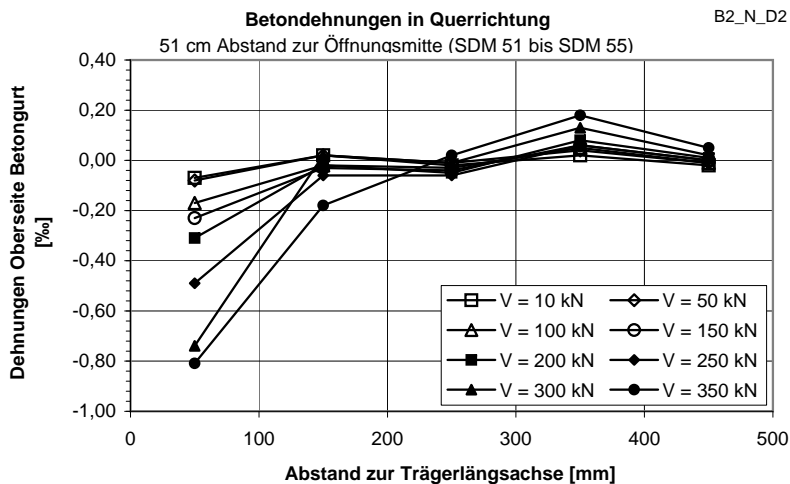
B.18.8. Betondehnungen

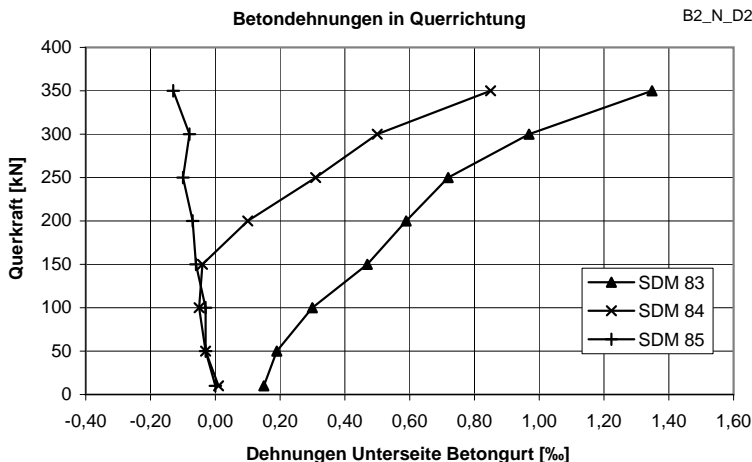
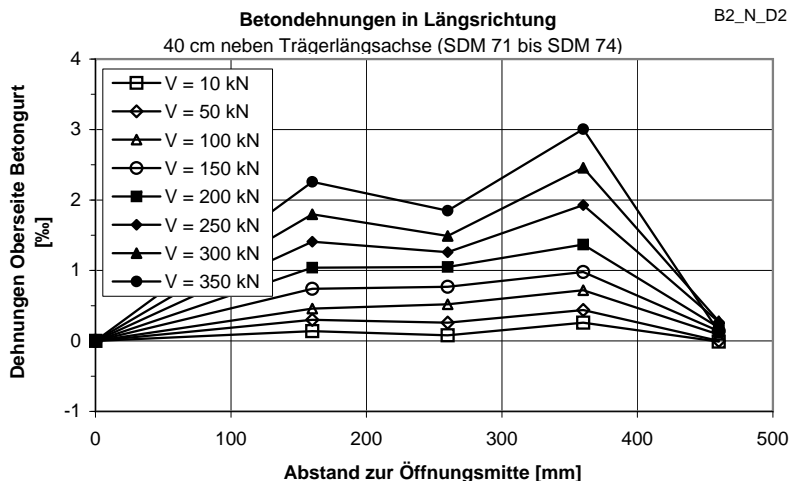
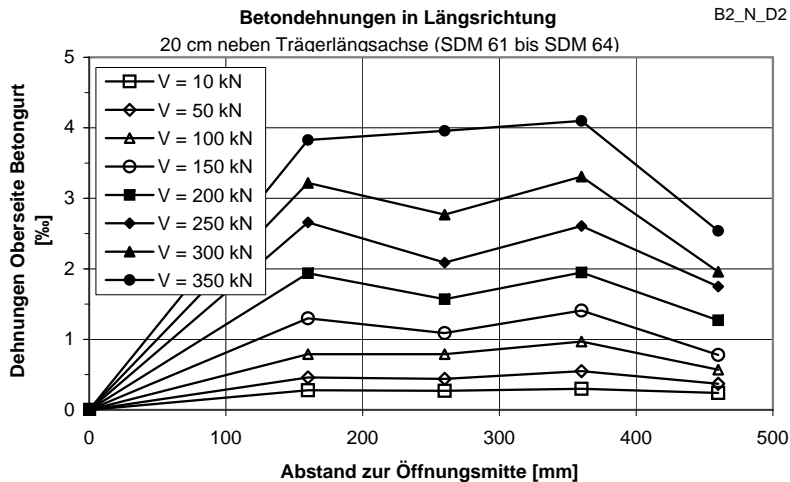


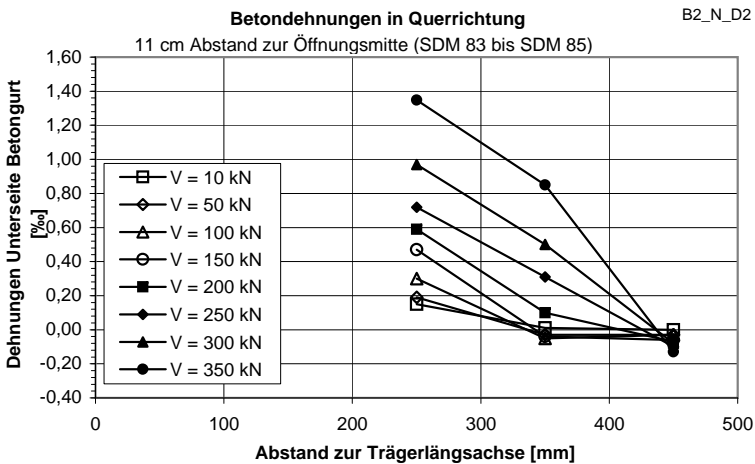
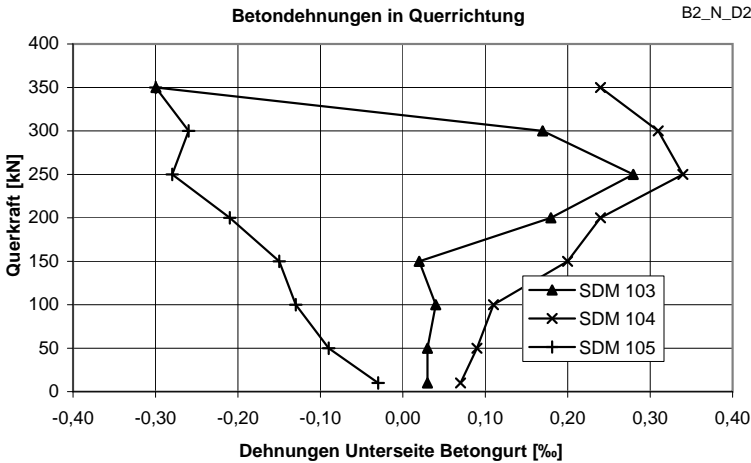
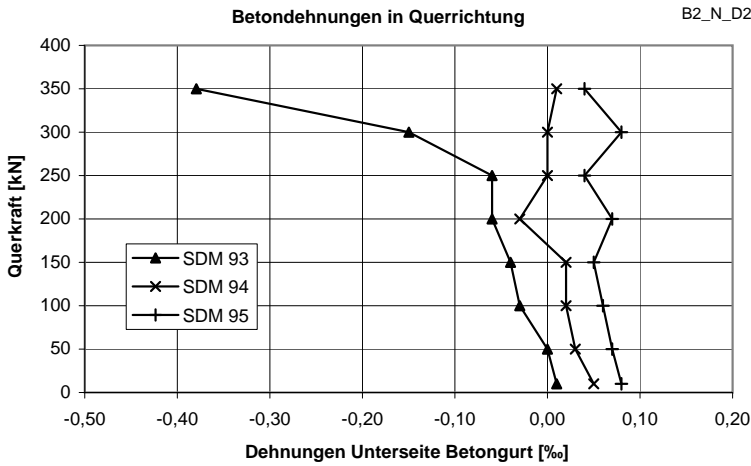


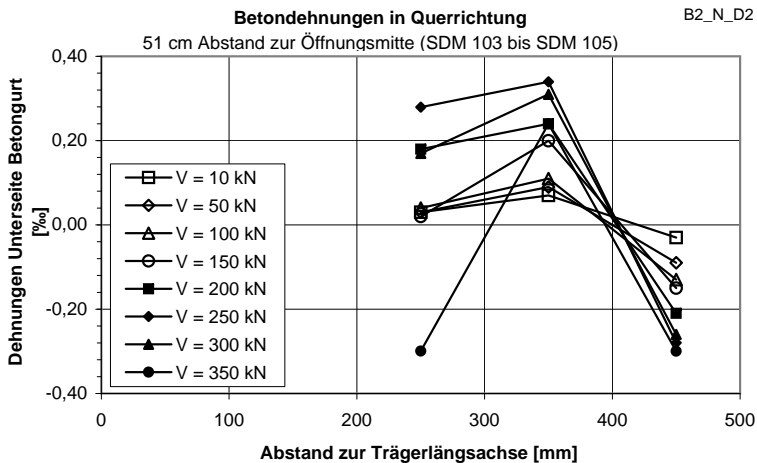
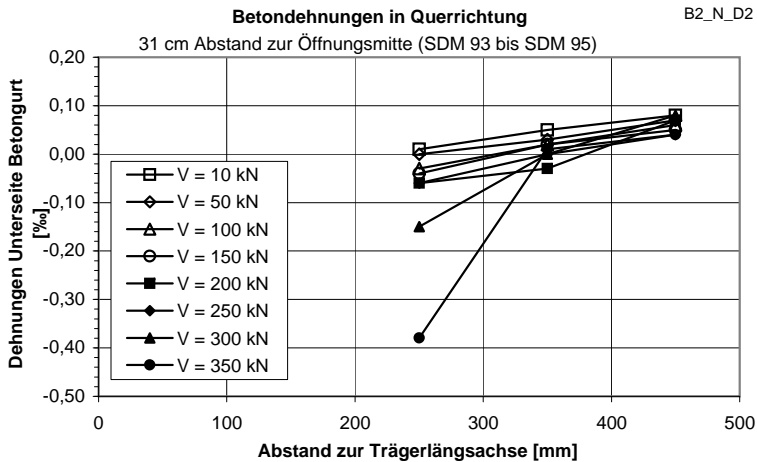






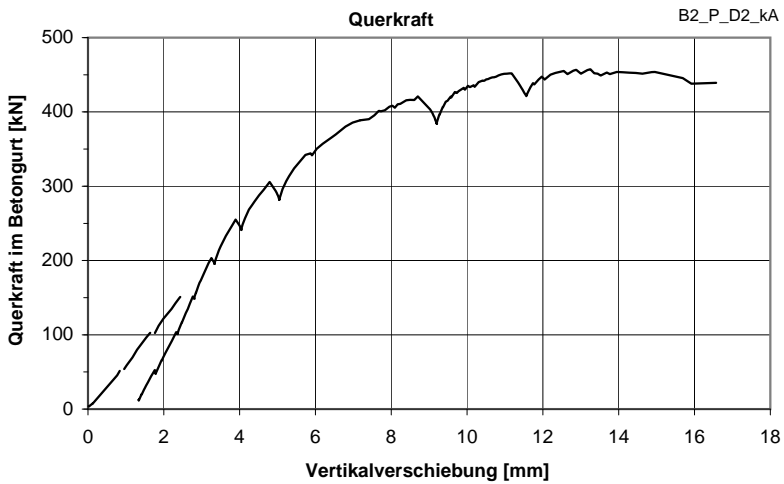
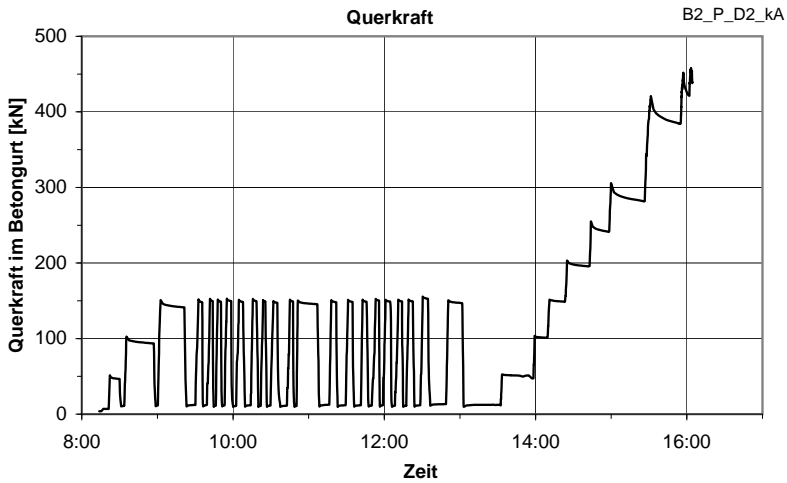


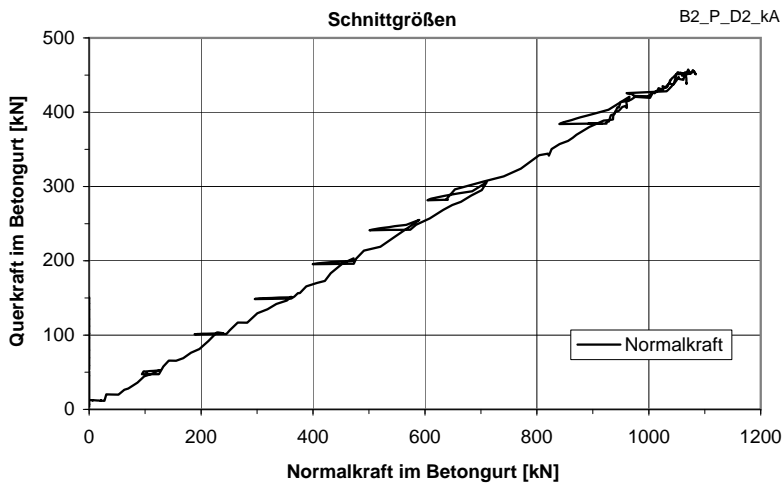
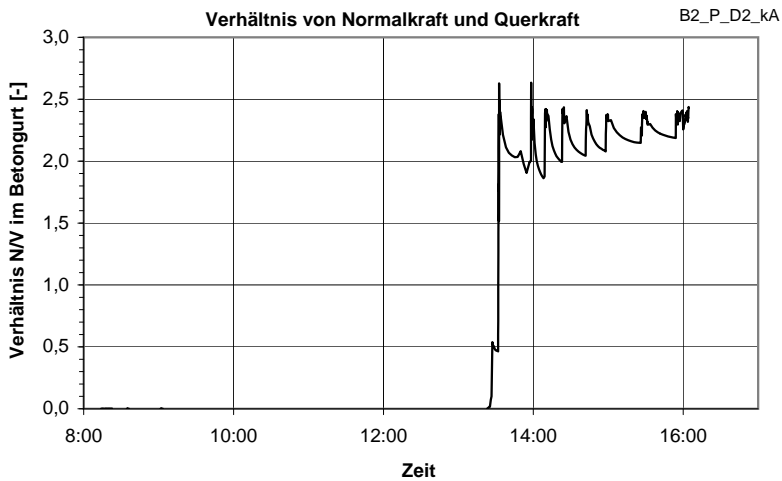
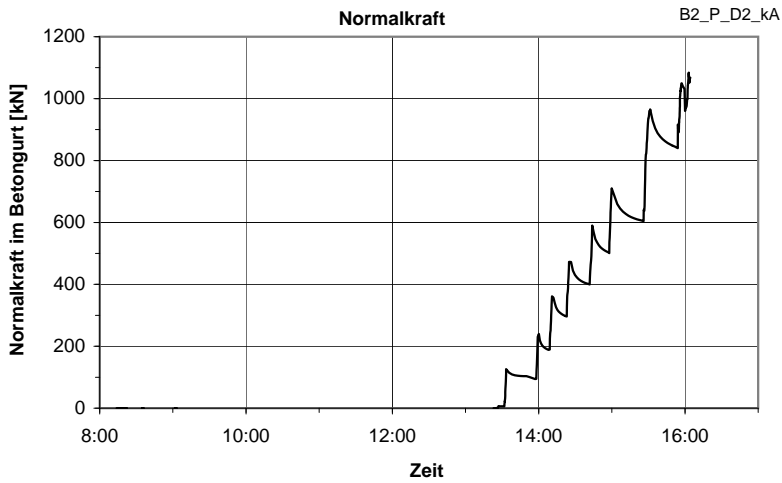


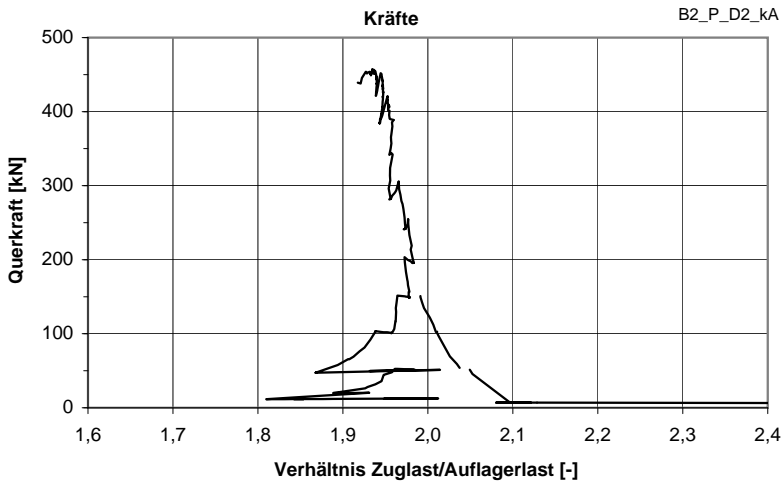
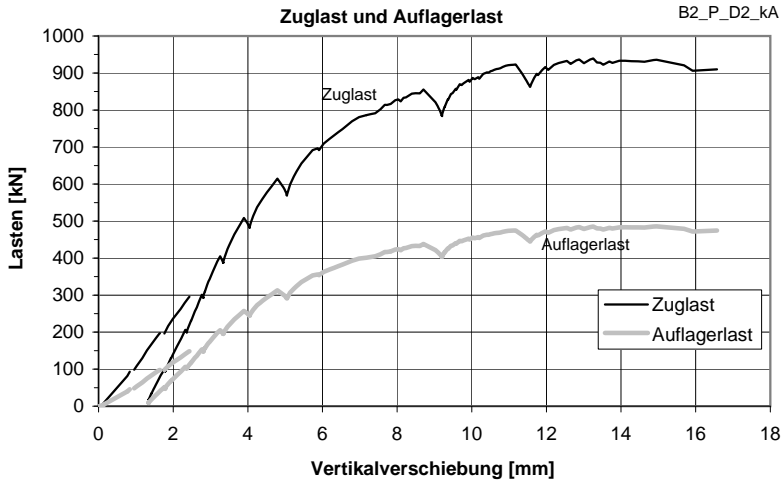


B.19. Versuch B2_P_D2_kA

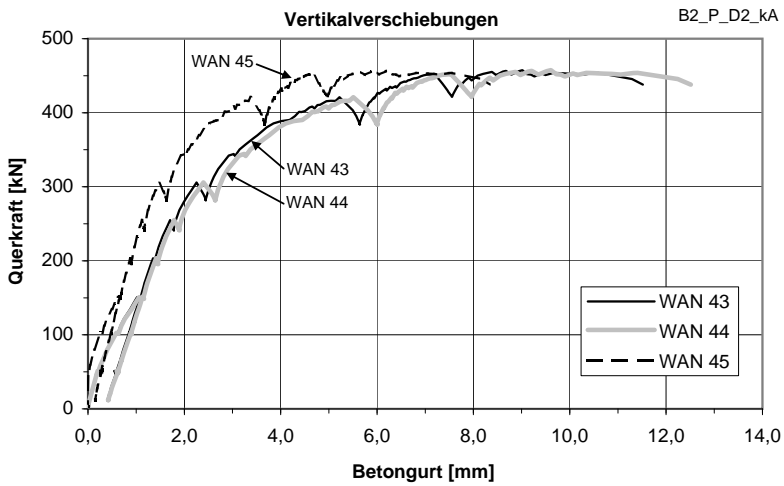
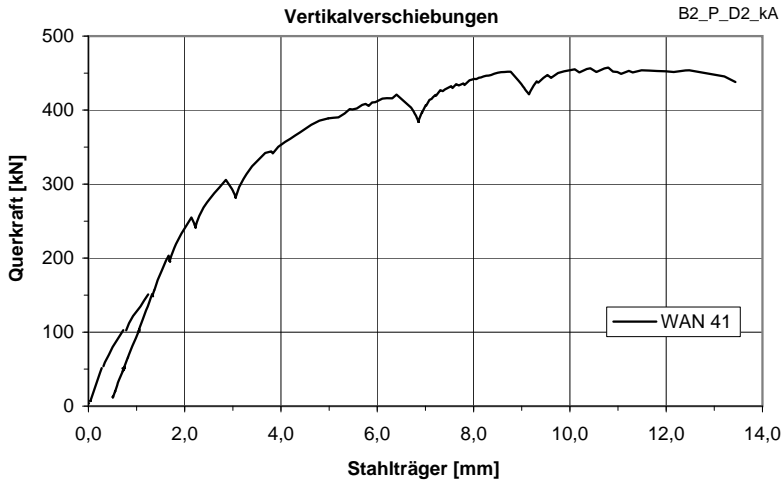
B.19.1. Kräfte

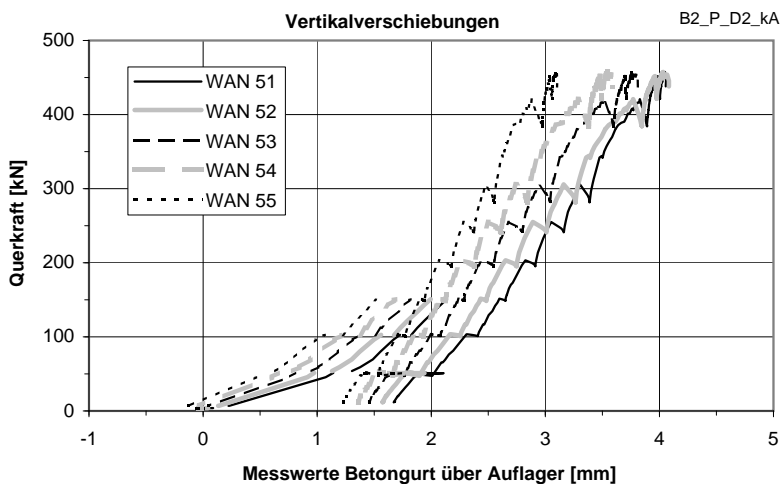
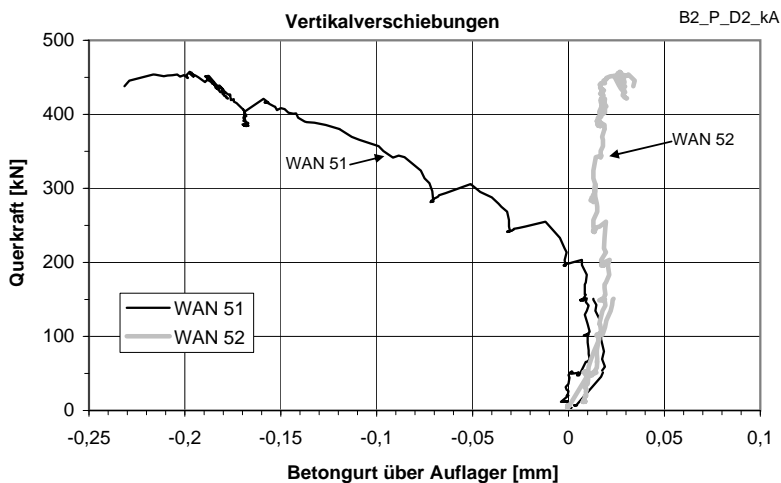
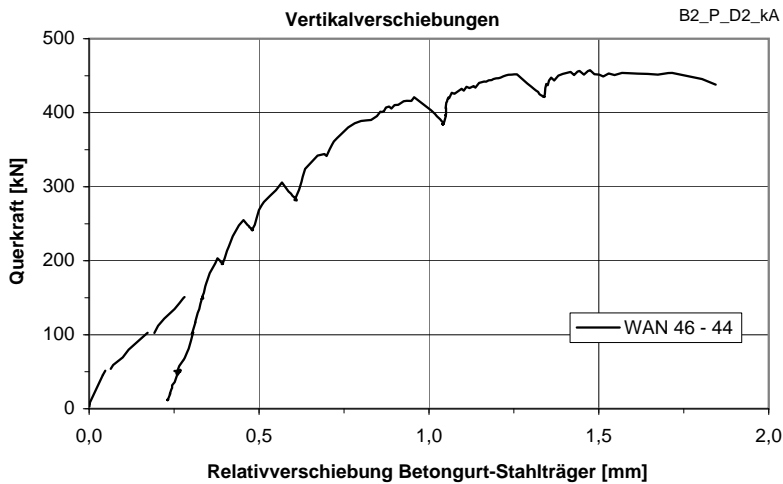




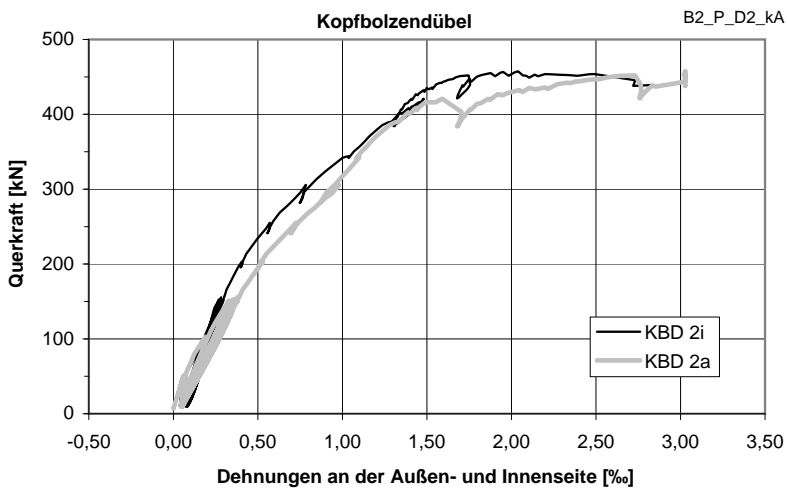
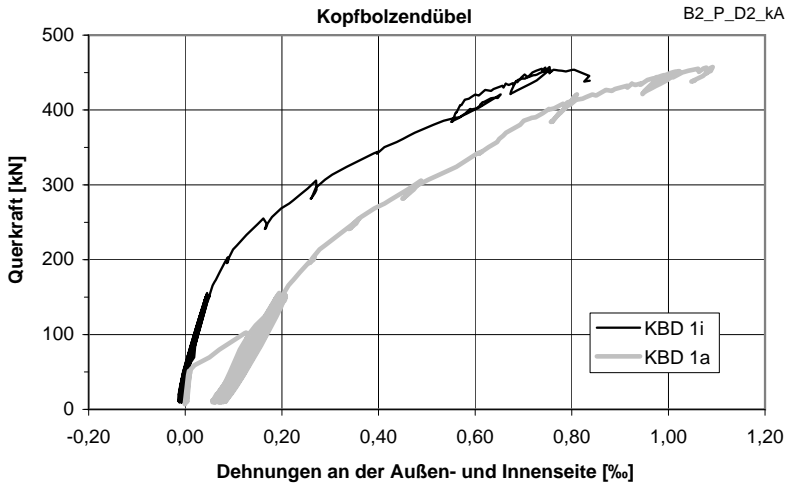


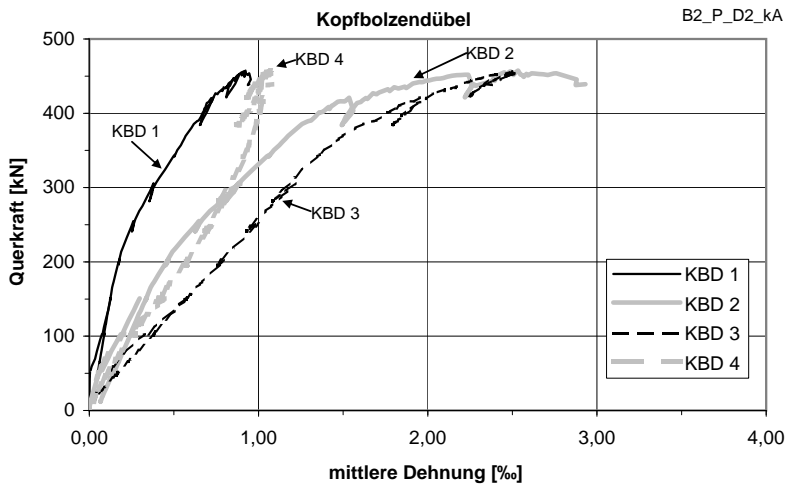
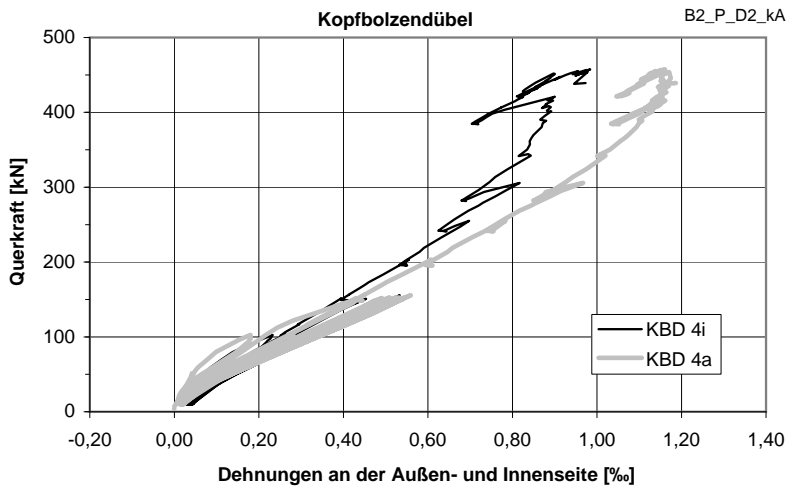
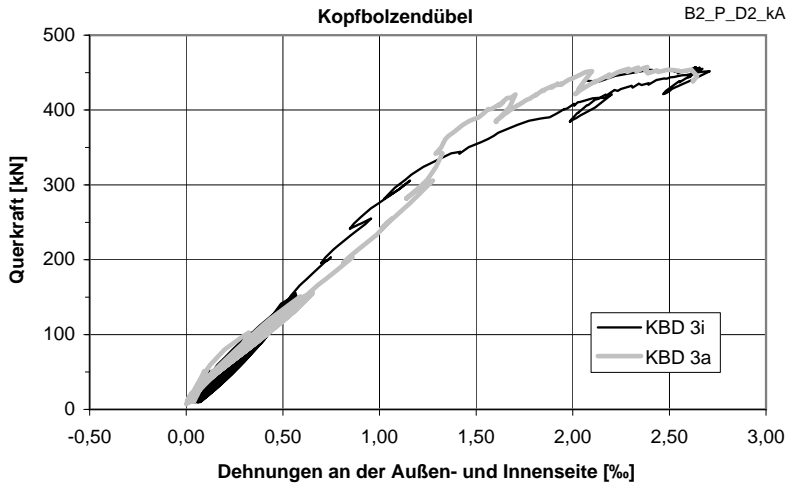
B.19.2. Verformungen

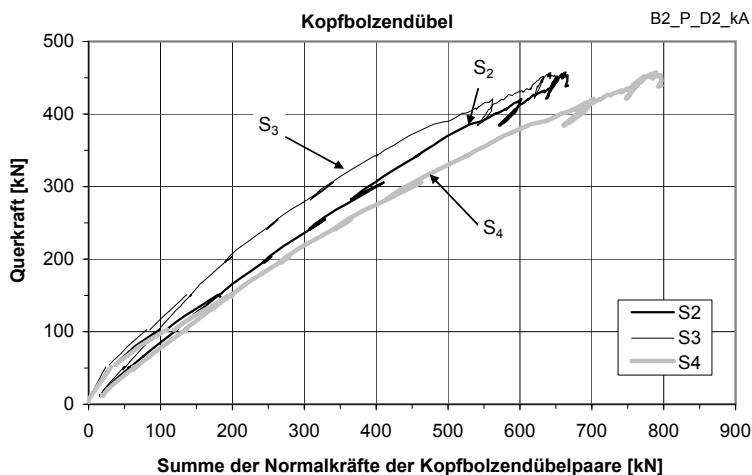
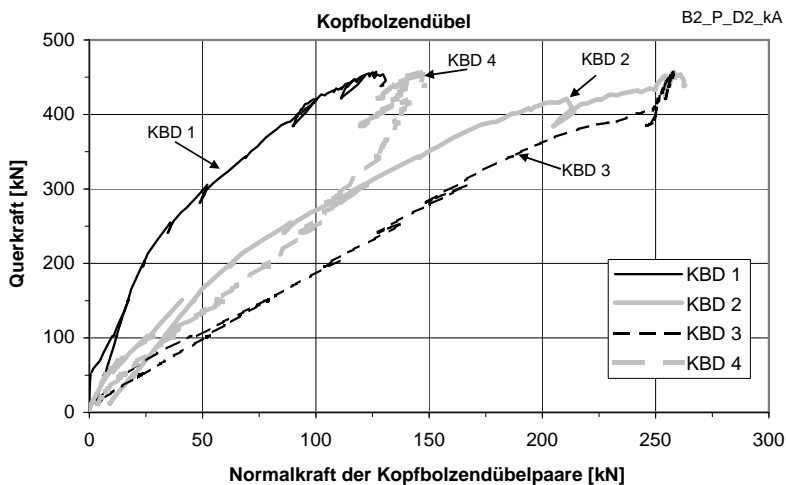
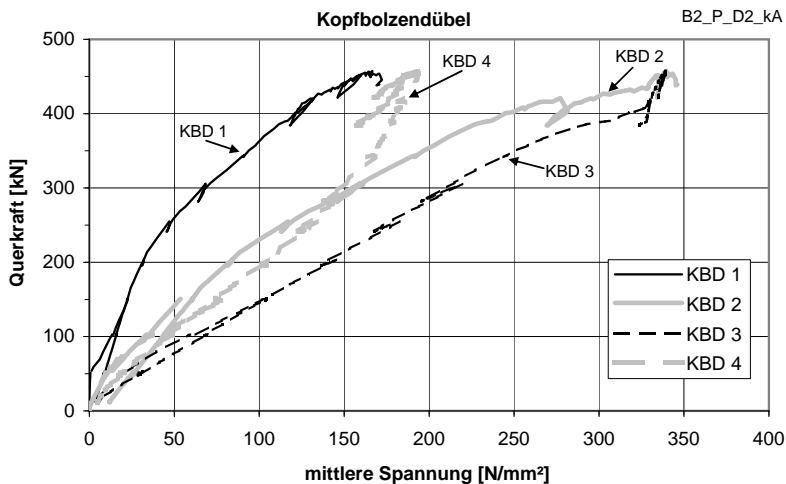




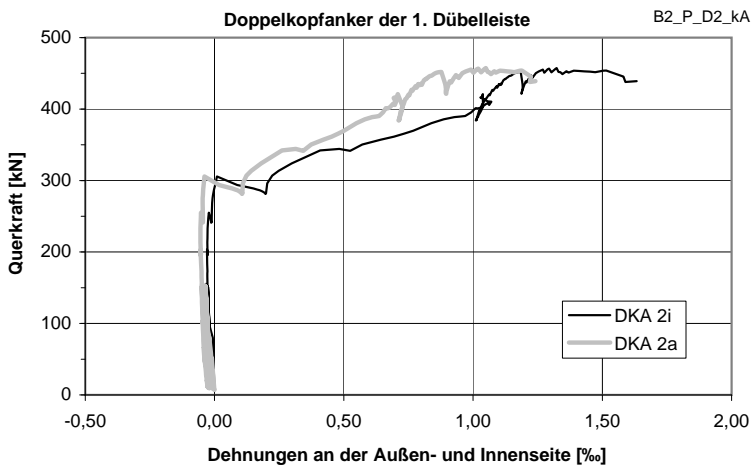
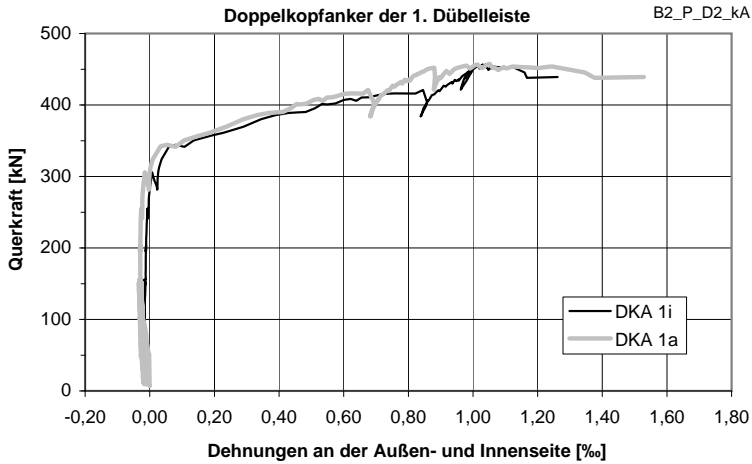
B.19.3. Kopfbolzendübel

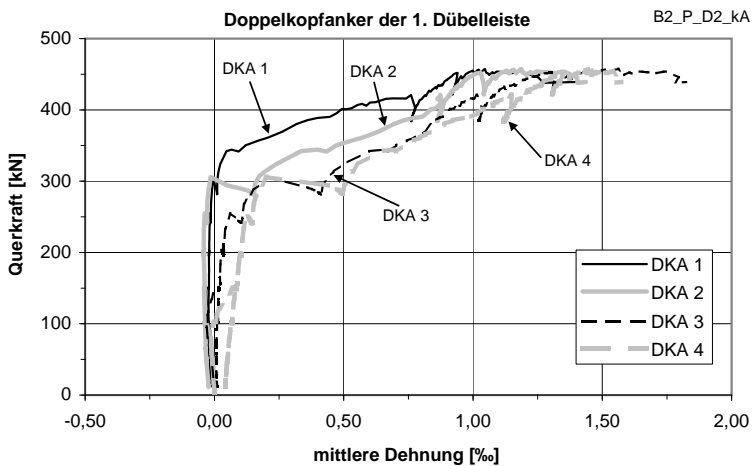
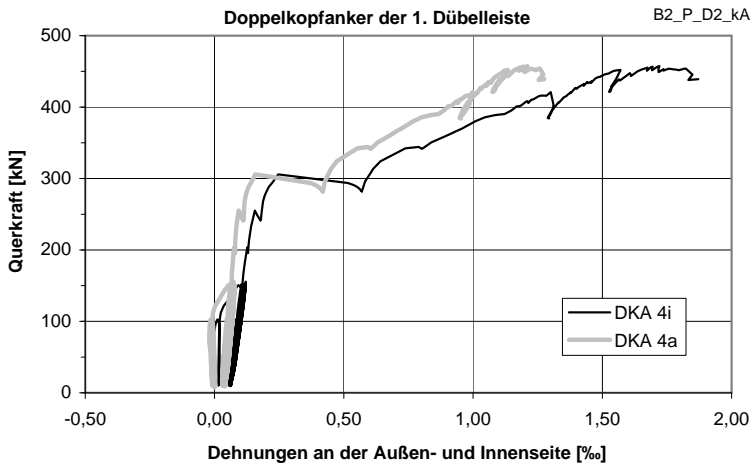
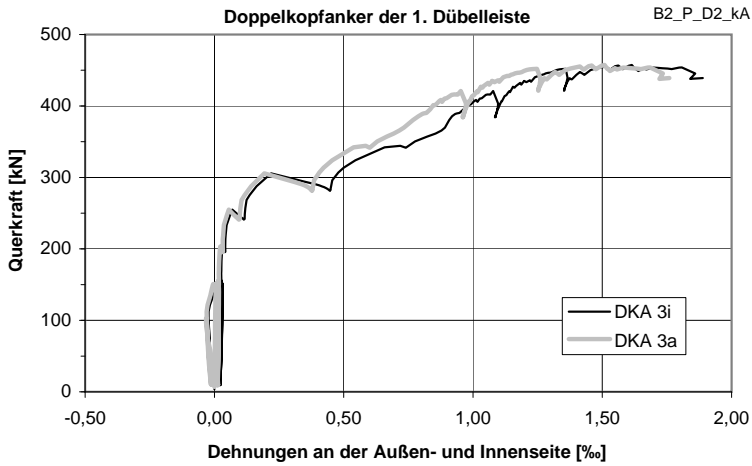


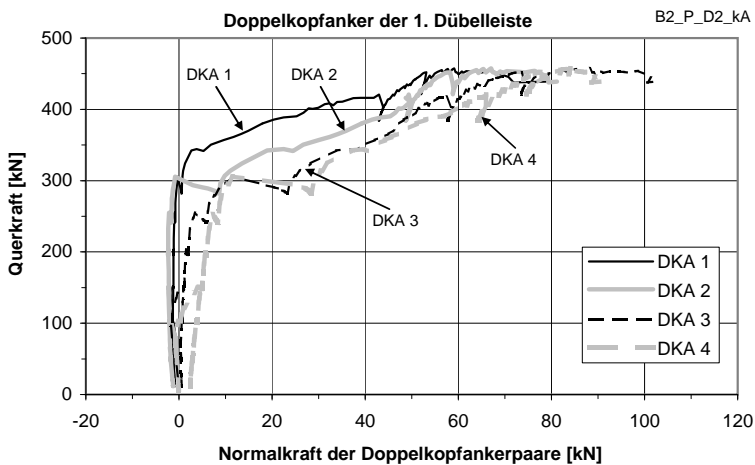
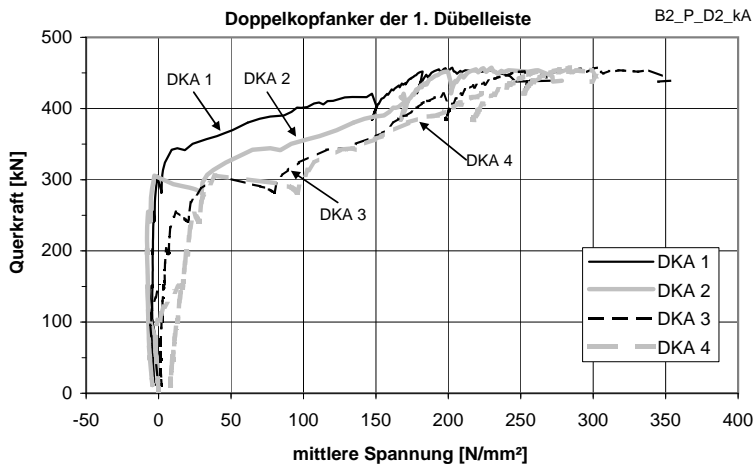




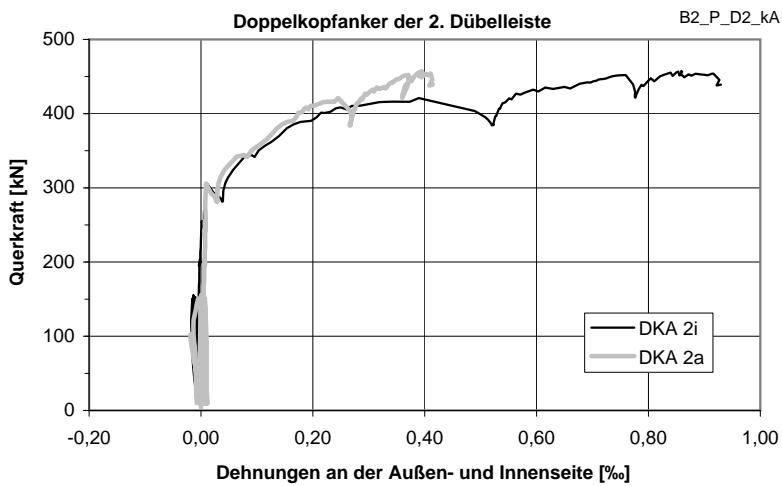
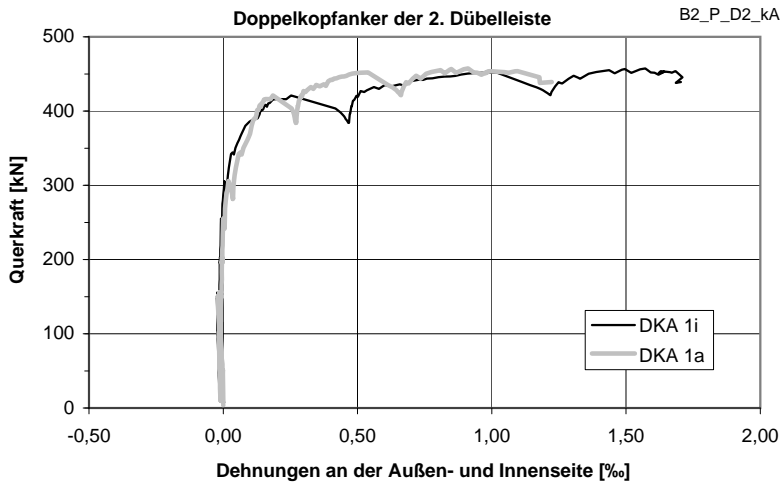
B.19.4. Doppelkopfanker der ersten Dübelleiste

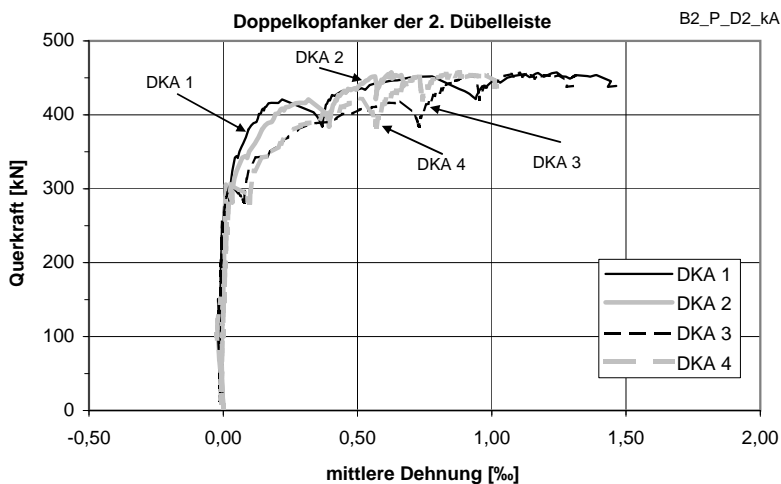
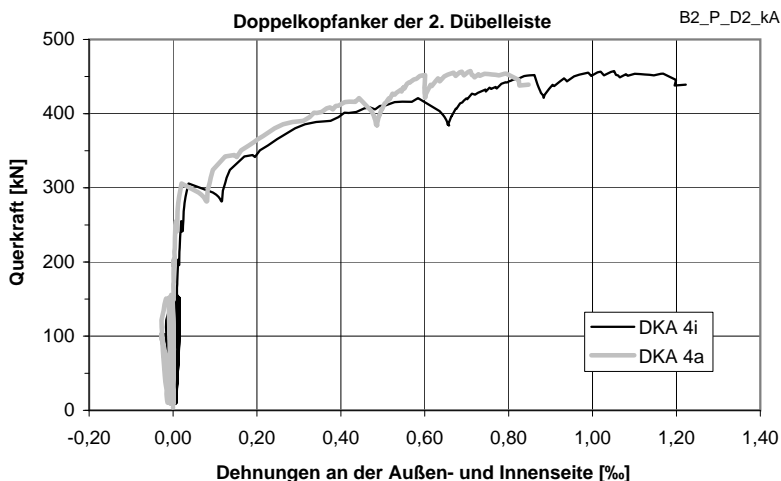
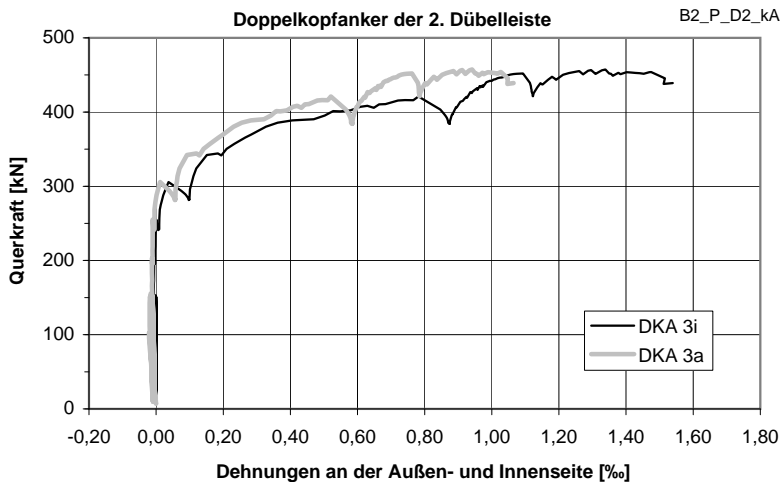


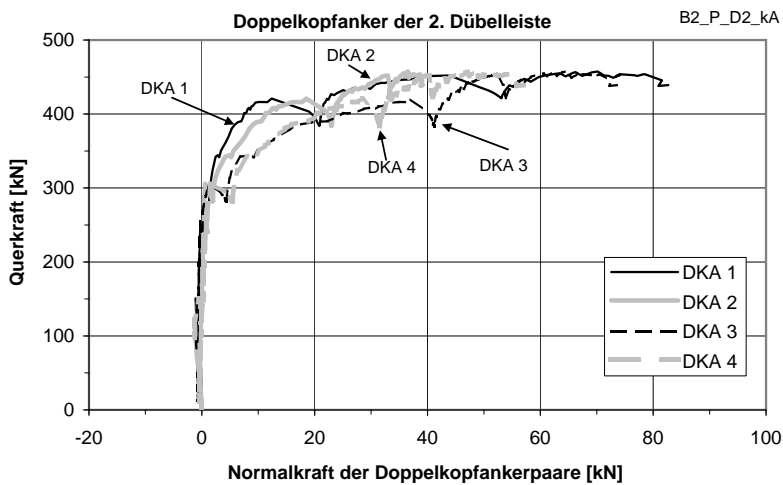
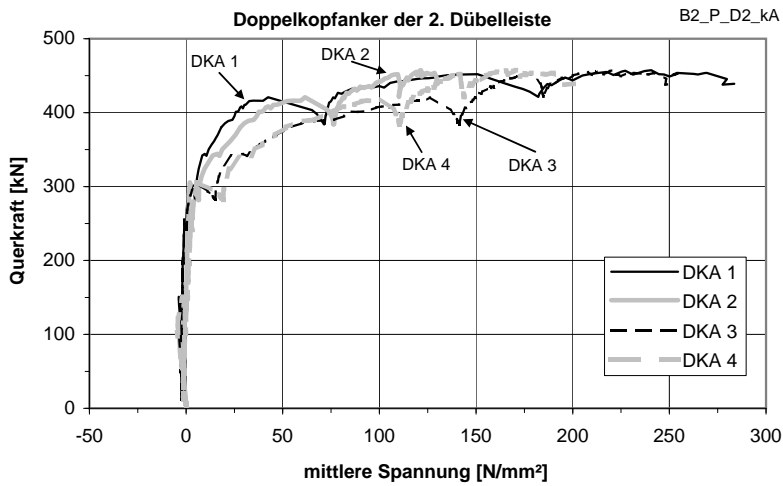




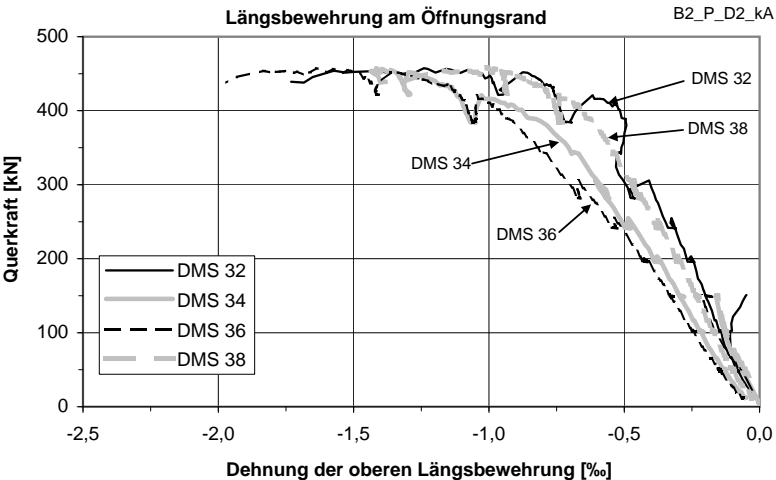
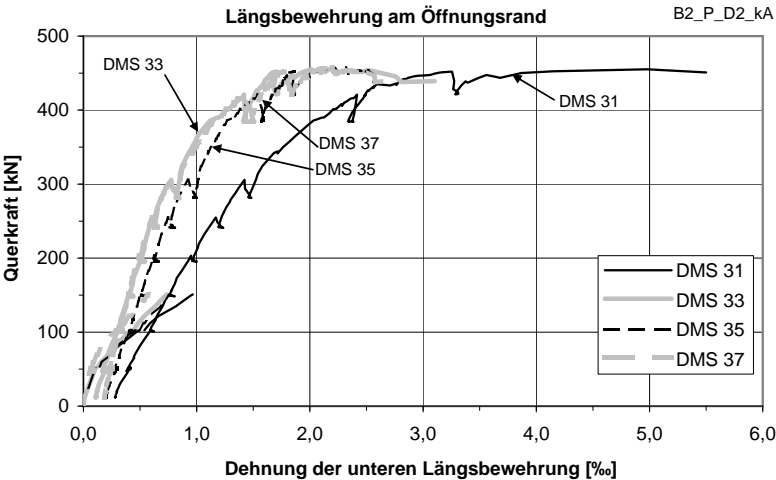
B.19.5. Doppelkopfkanker der zweiten Dübelleiste

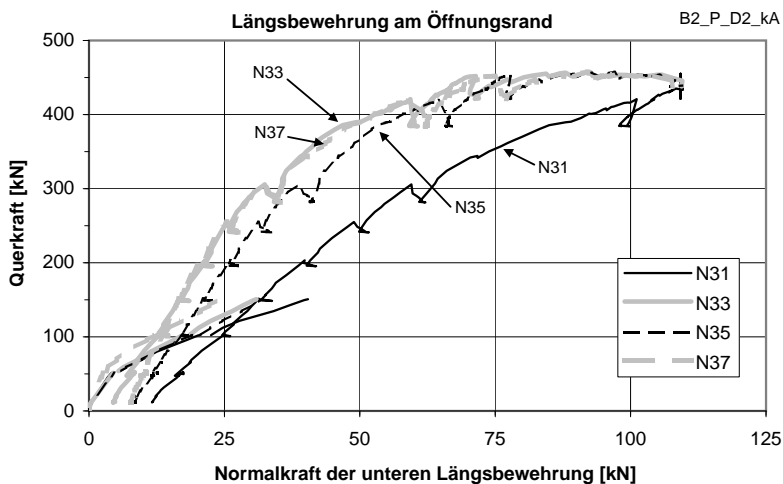
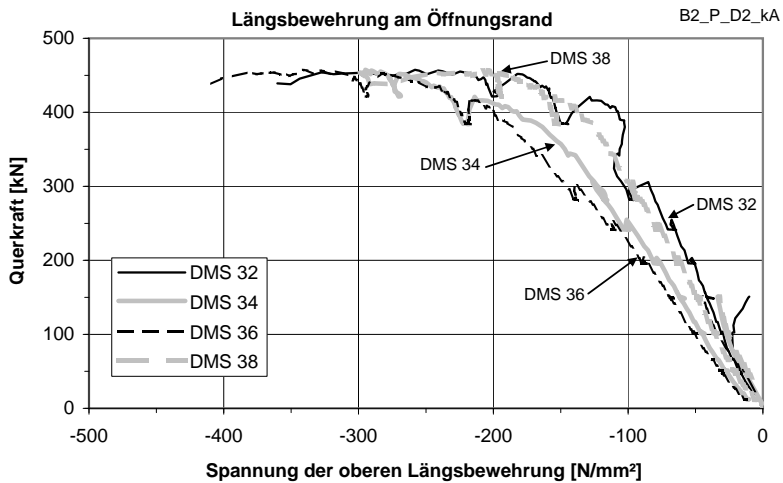
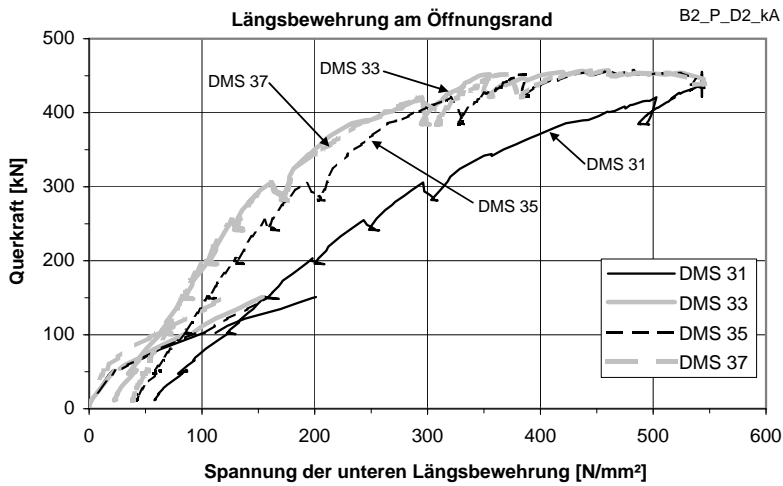


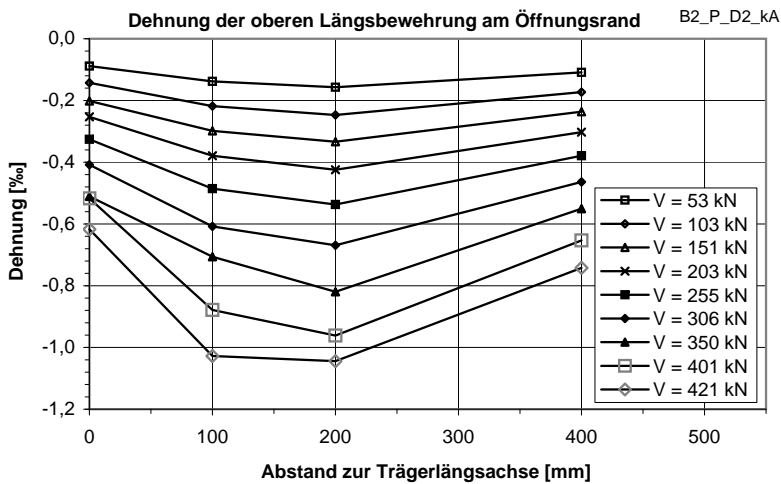
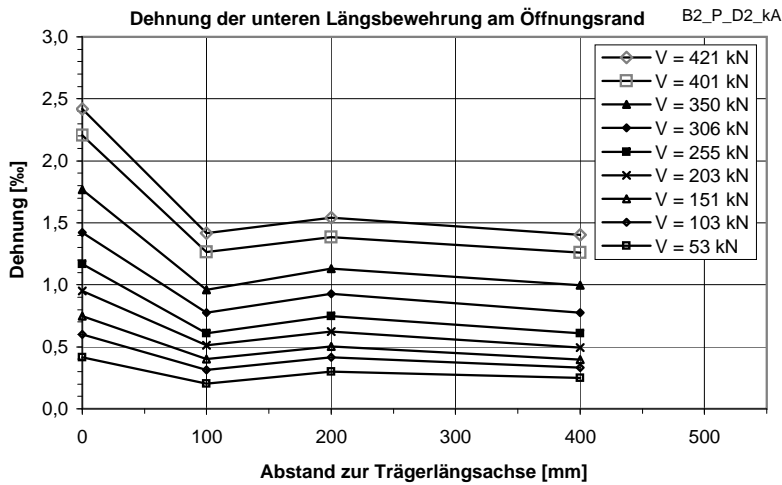
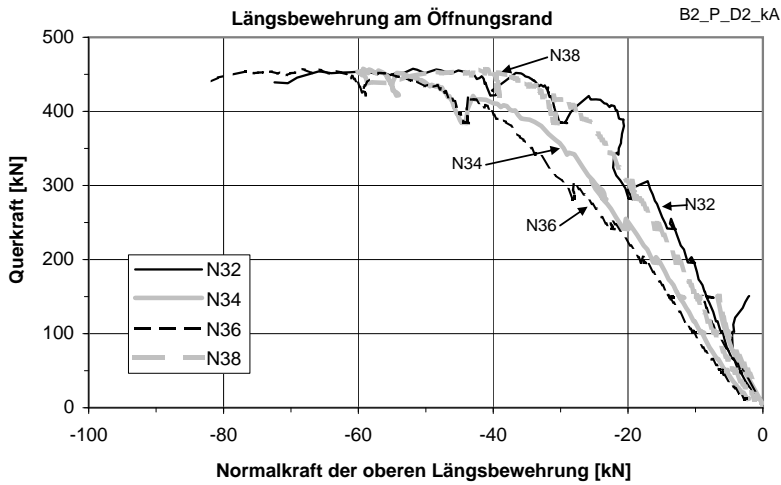


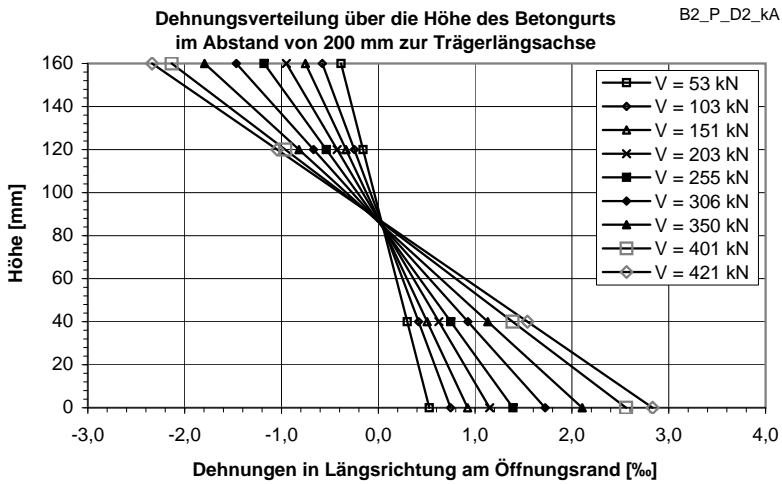
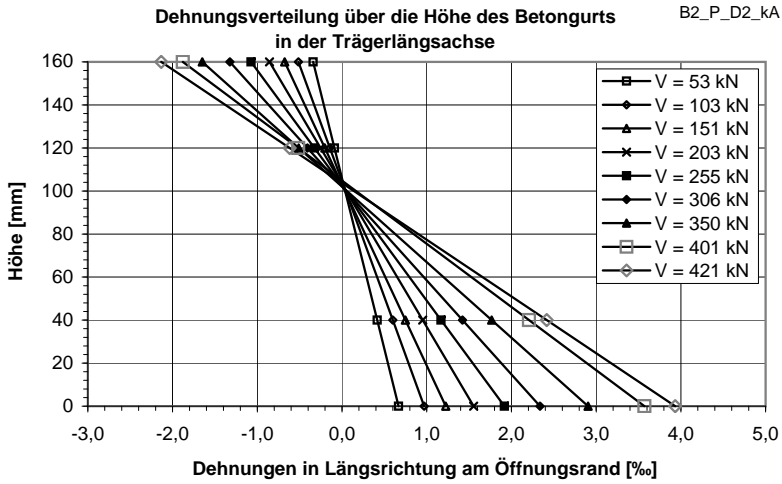


B.19.6. Längsbewehrung

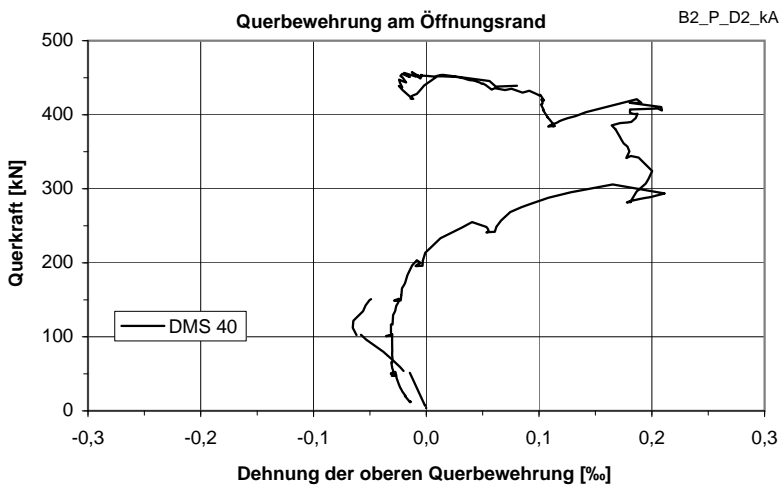
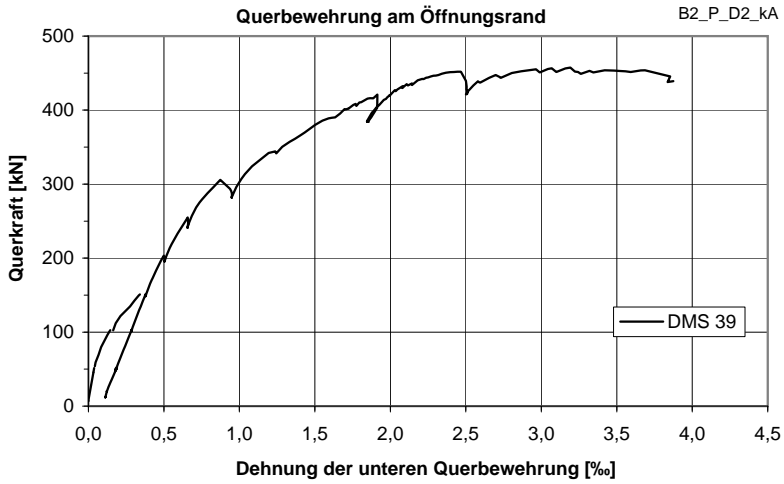


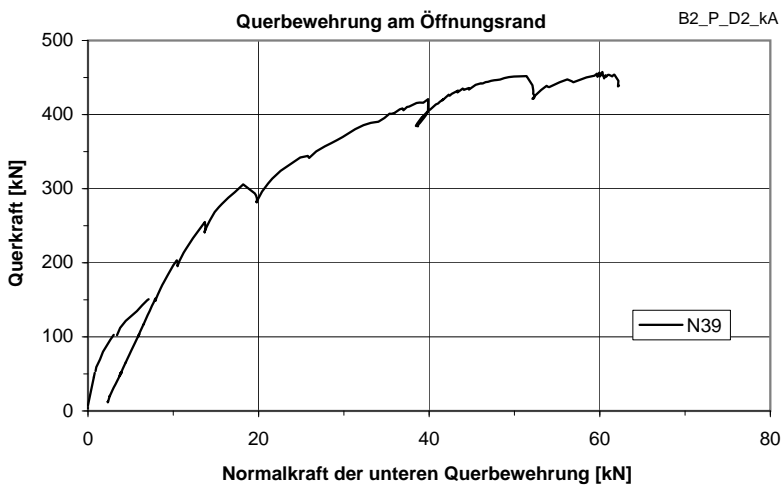
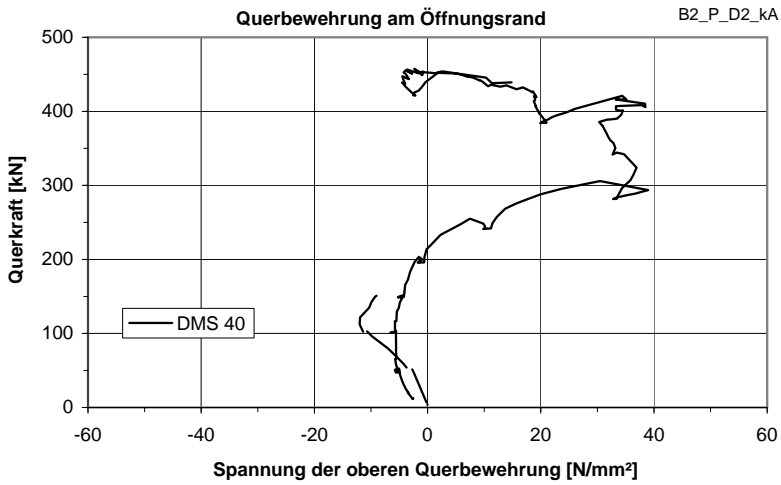
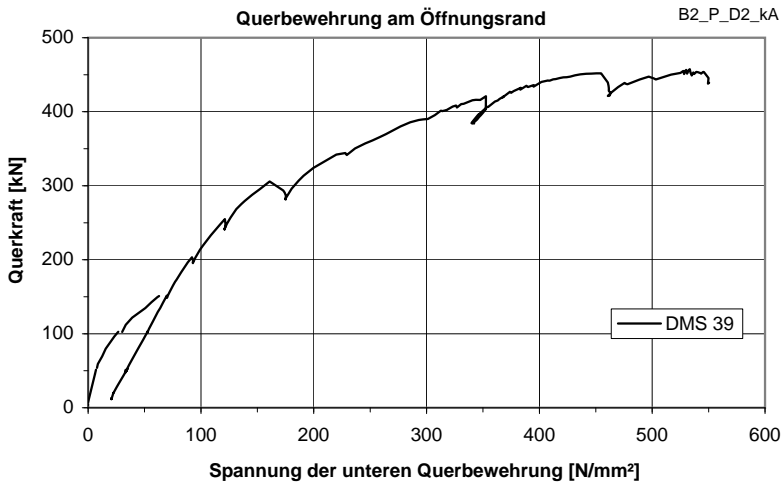


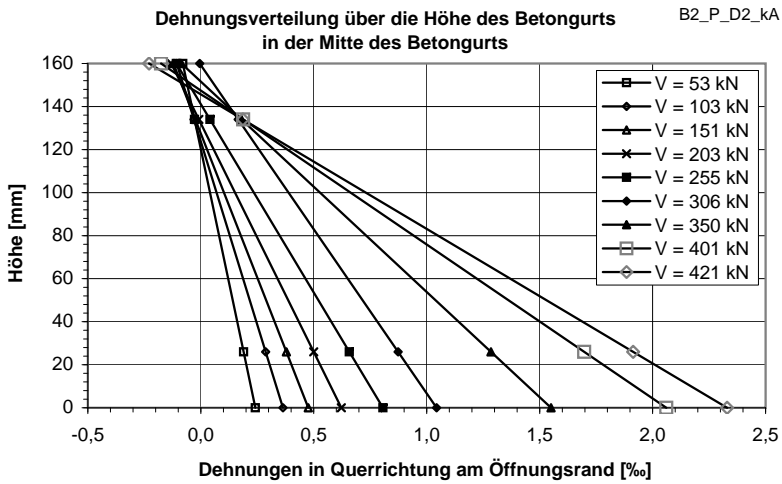
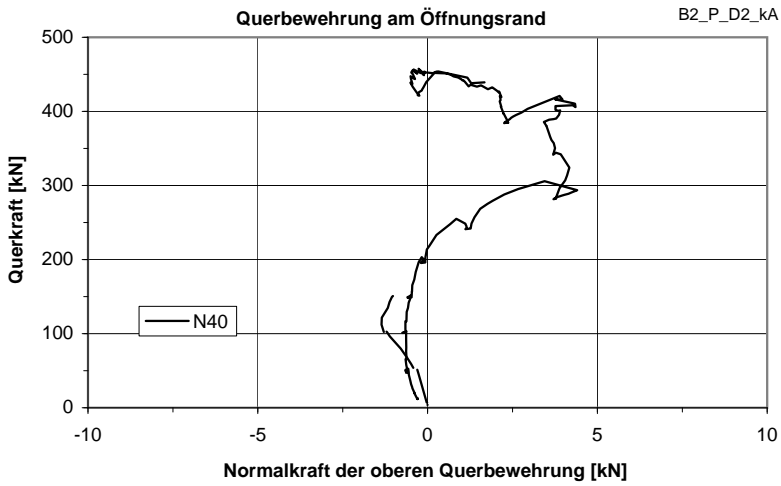




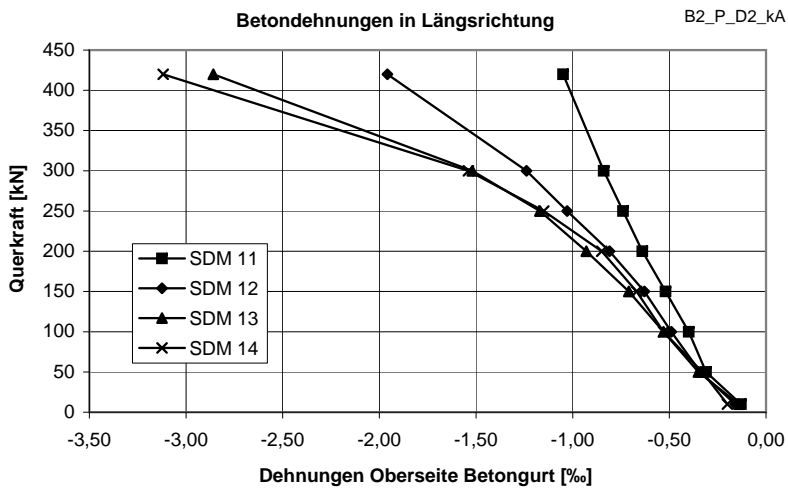
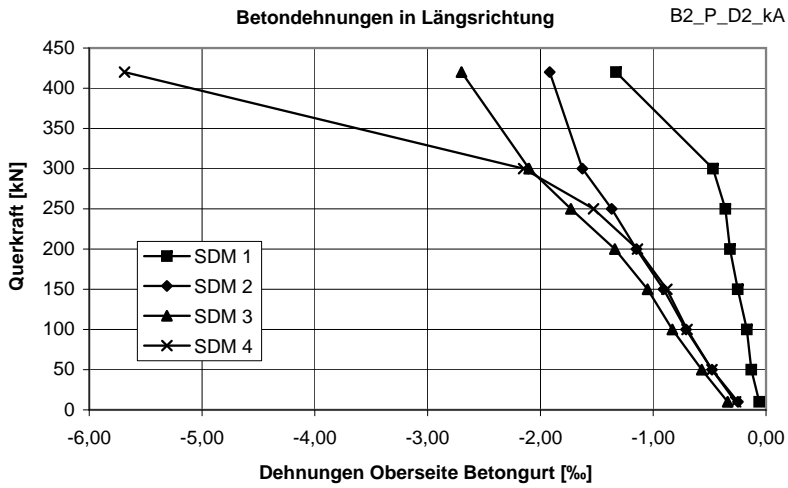
B.19.7. Querbewehrung

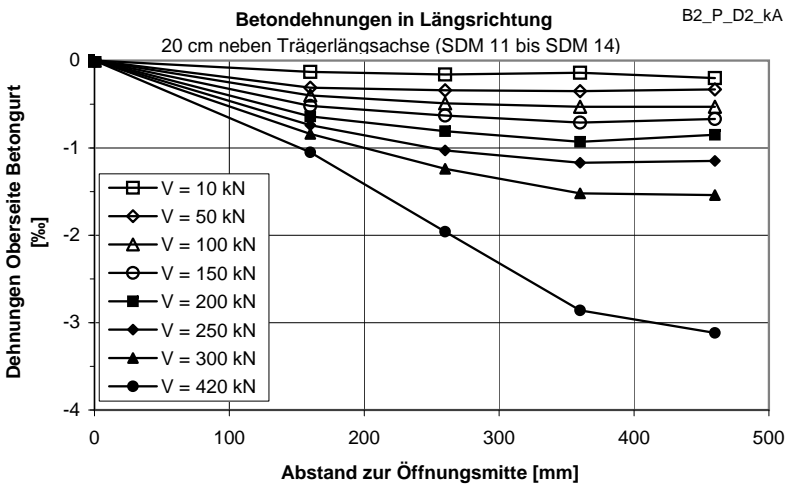
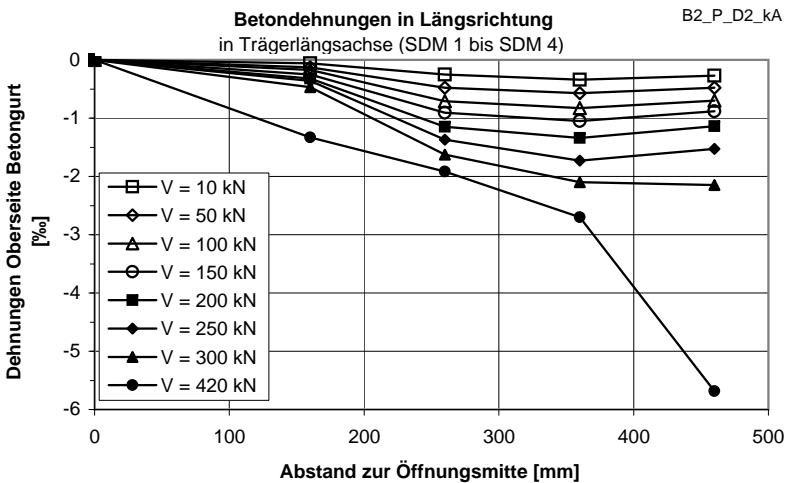
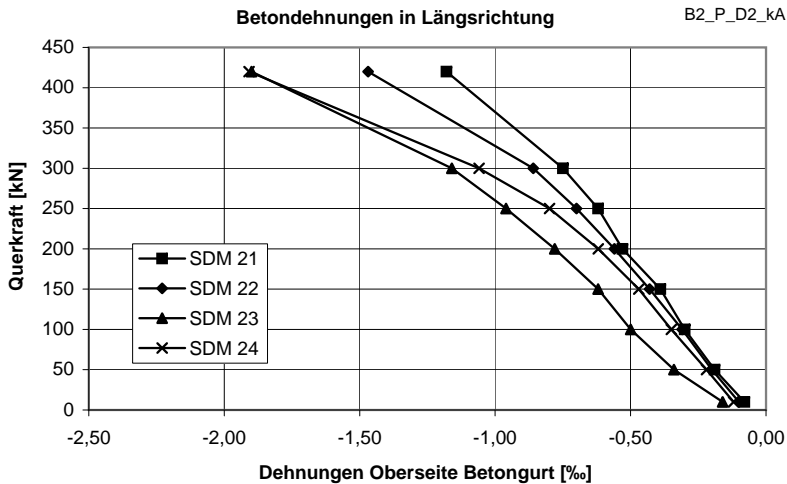


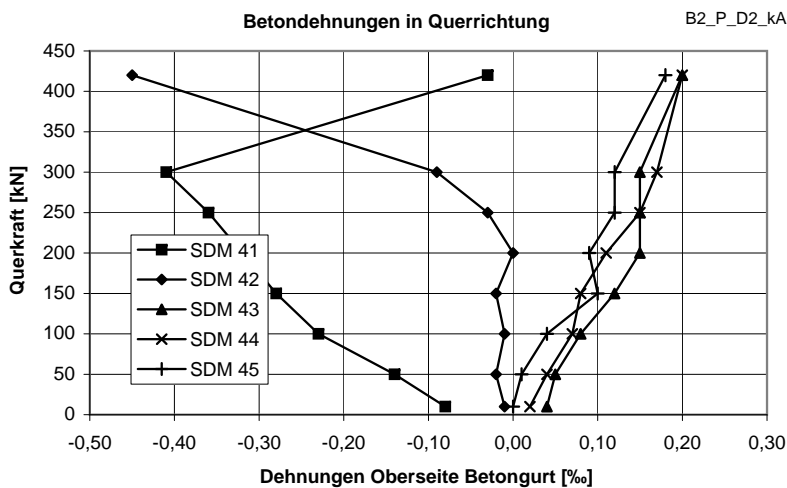
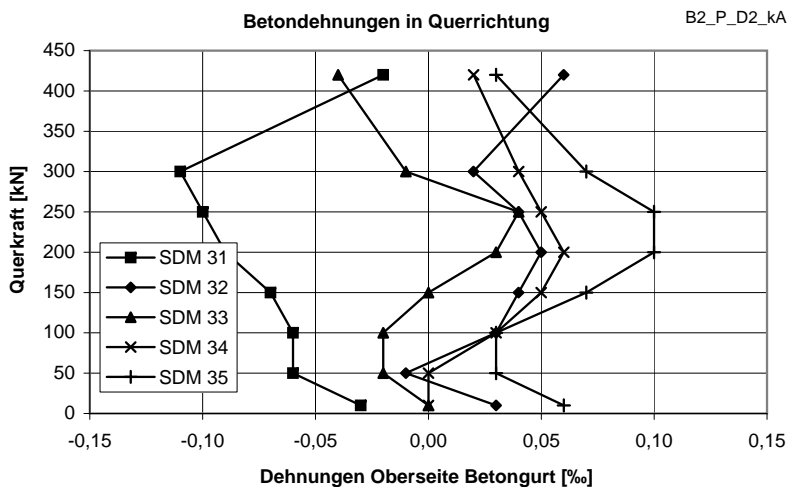
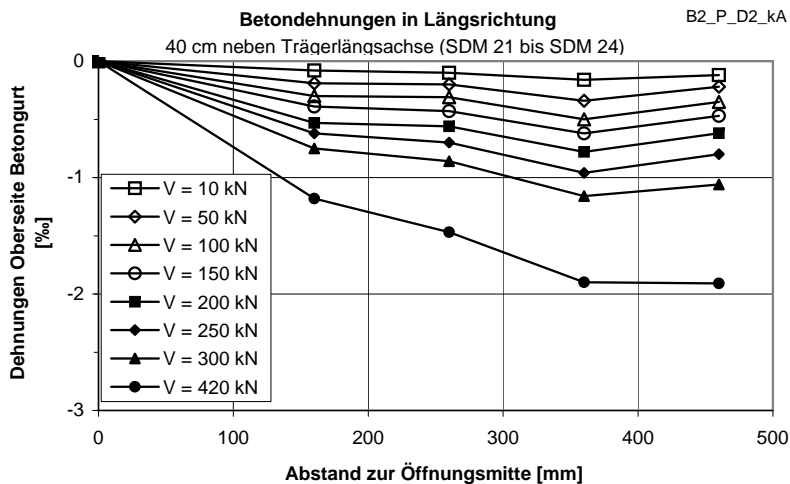


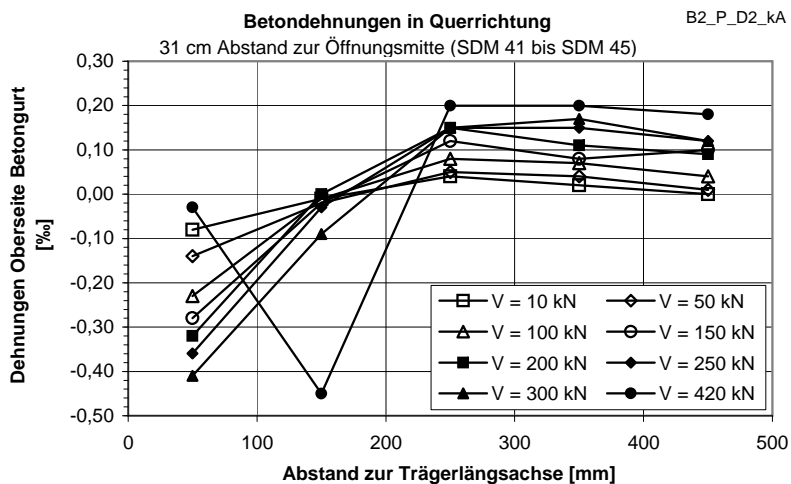
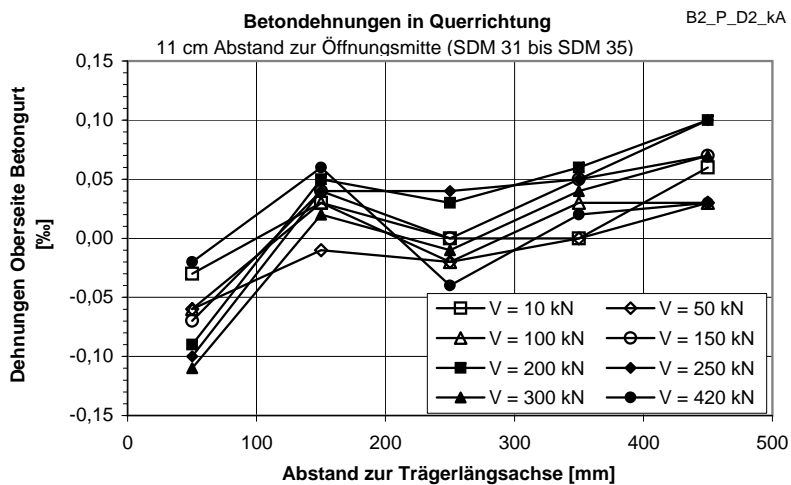
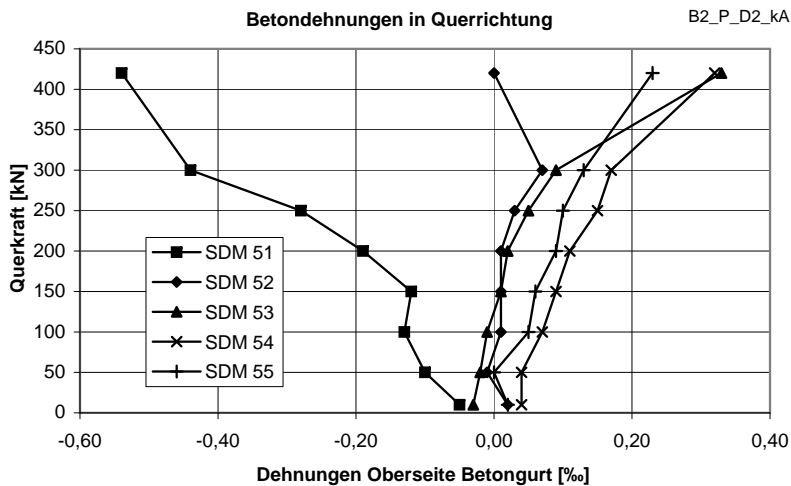


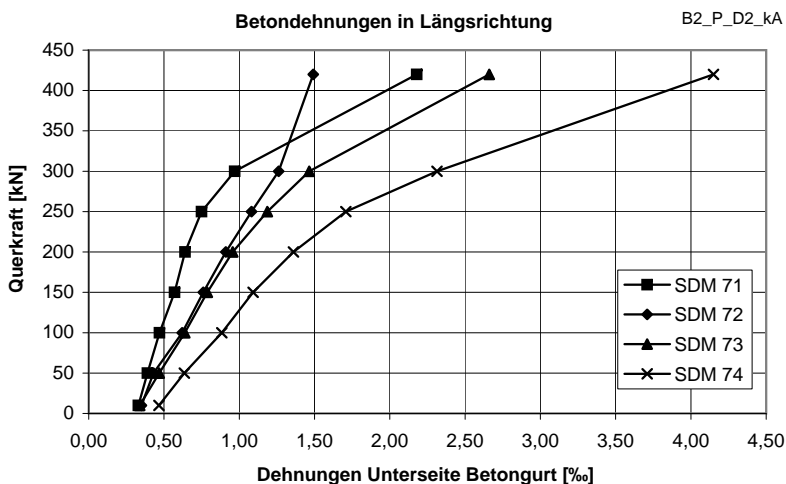
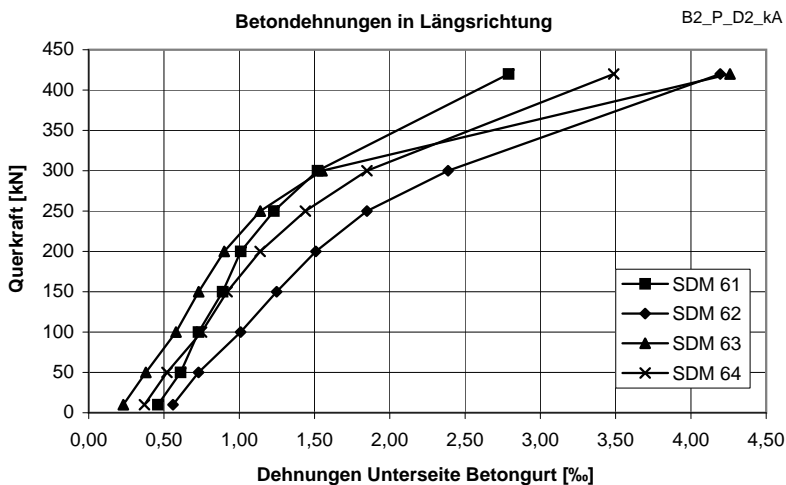
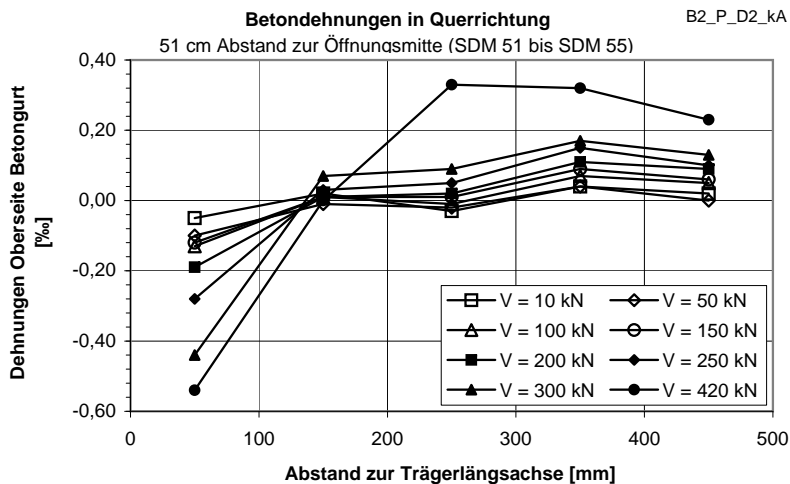
B.19.8. Betondehnungen

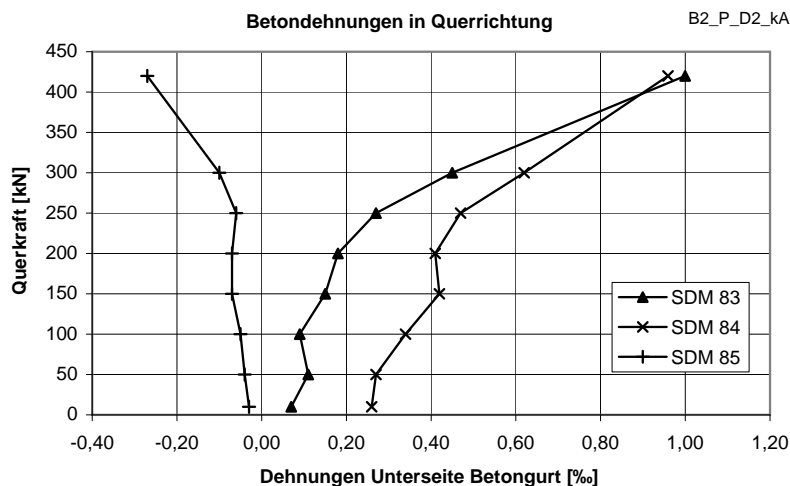
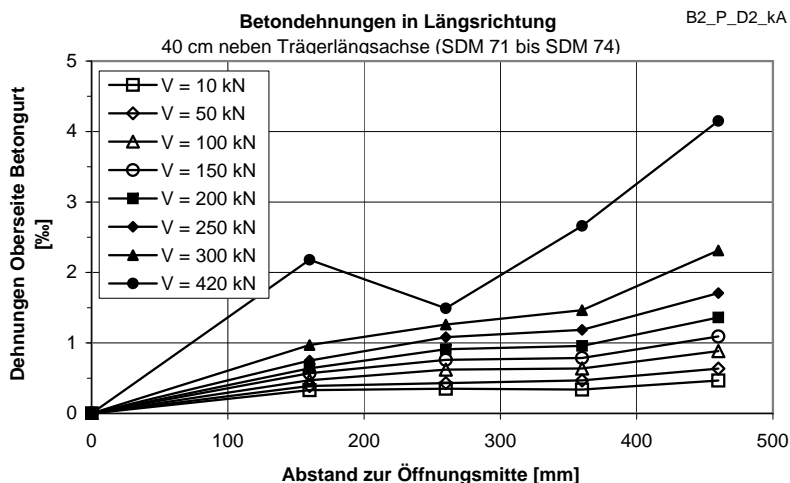
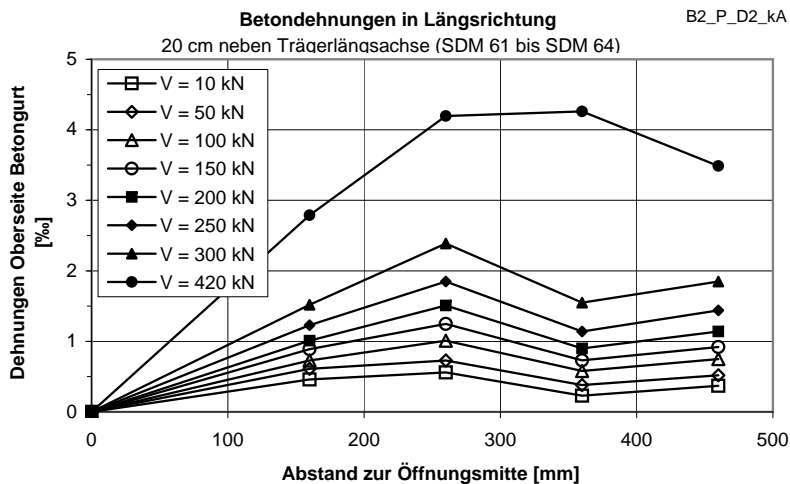


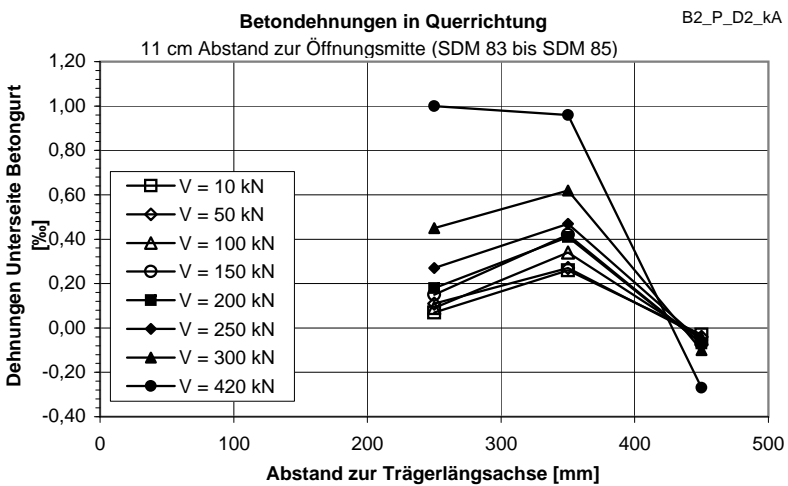
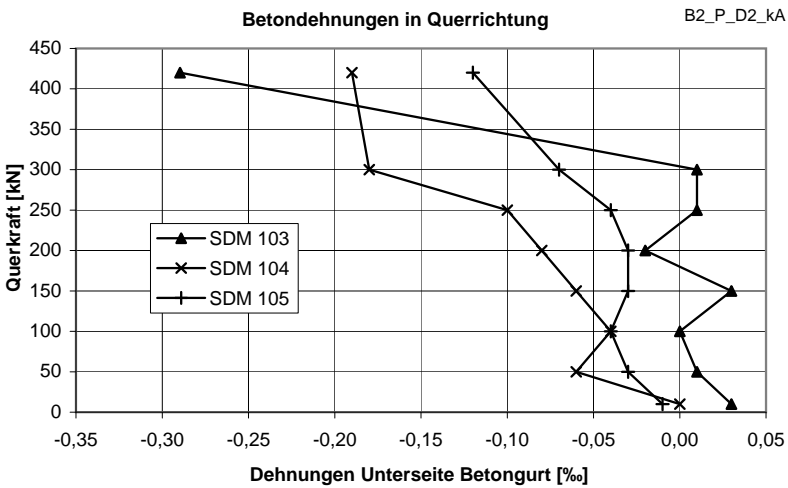
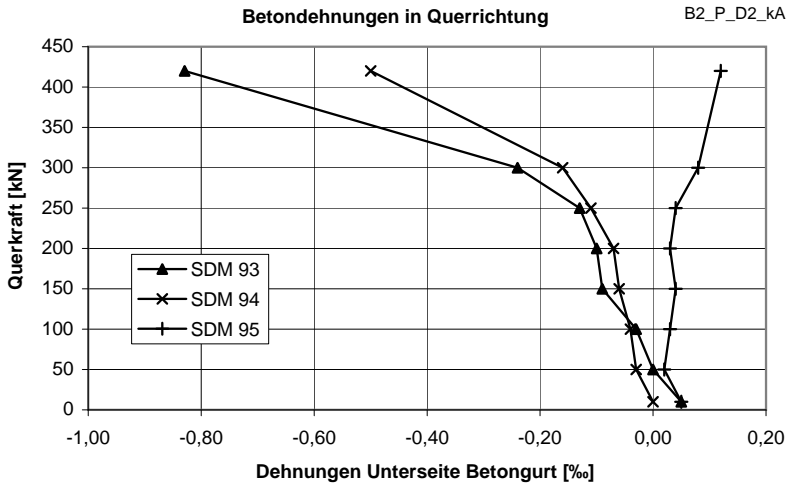


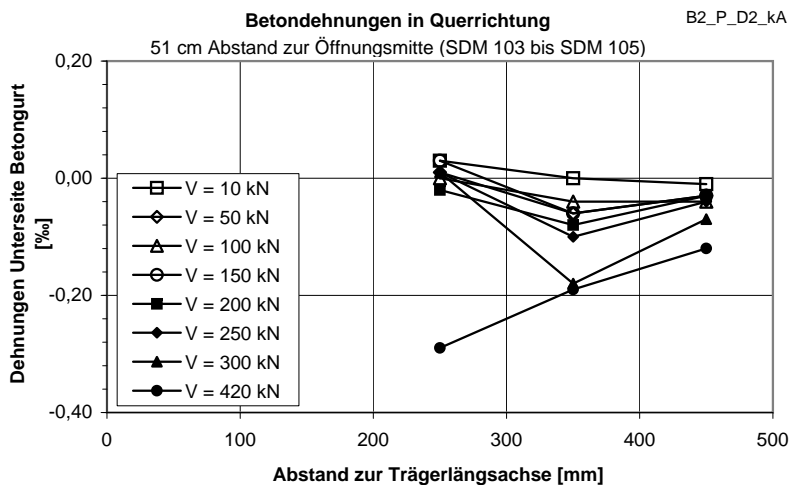
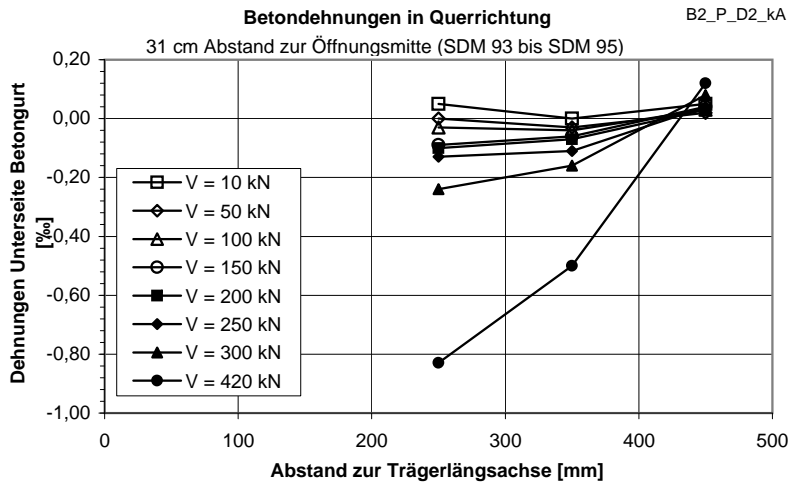






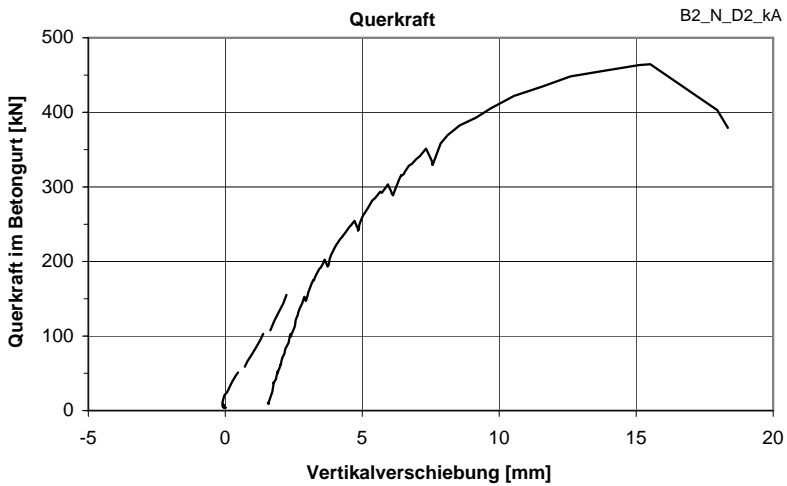
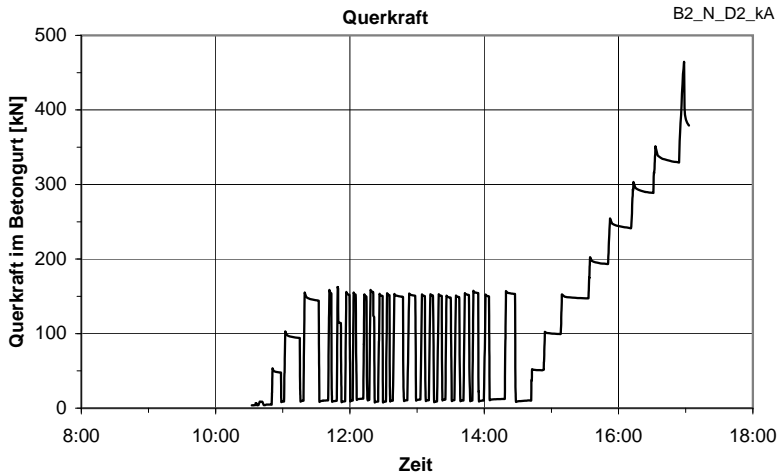


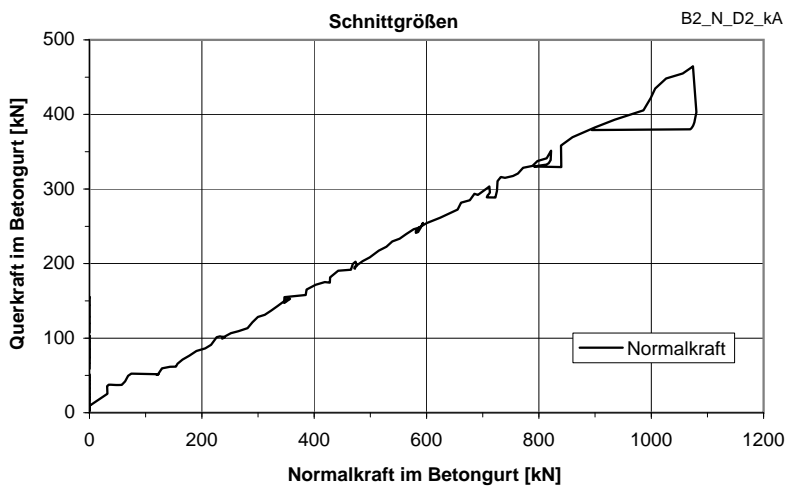
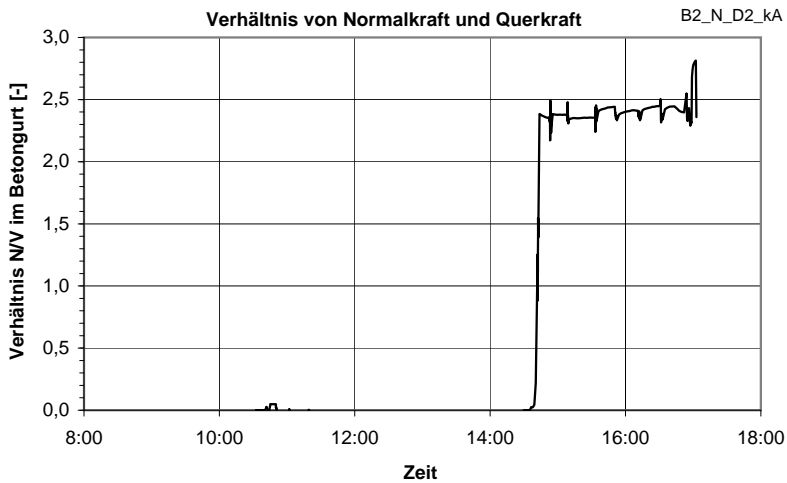
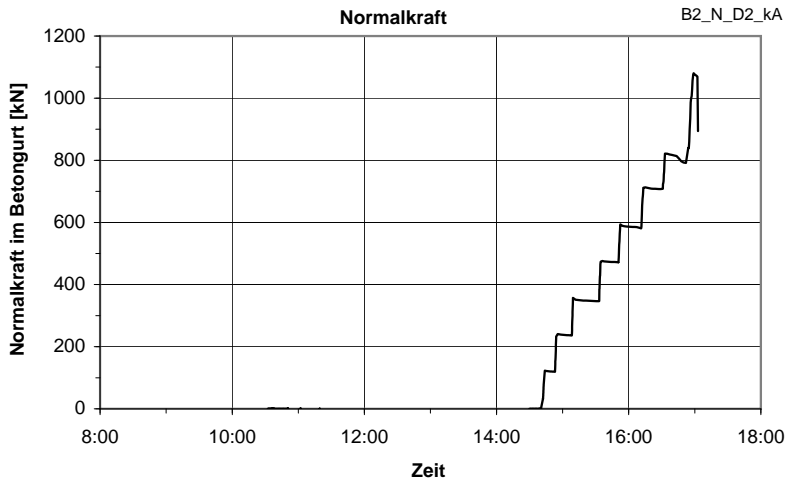


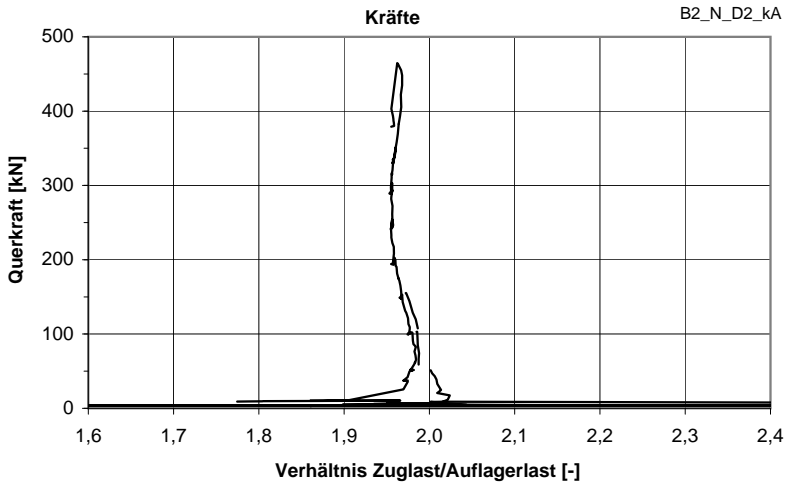
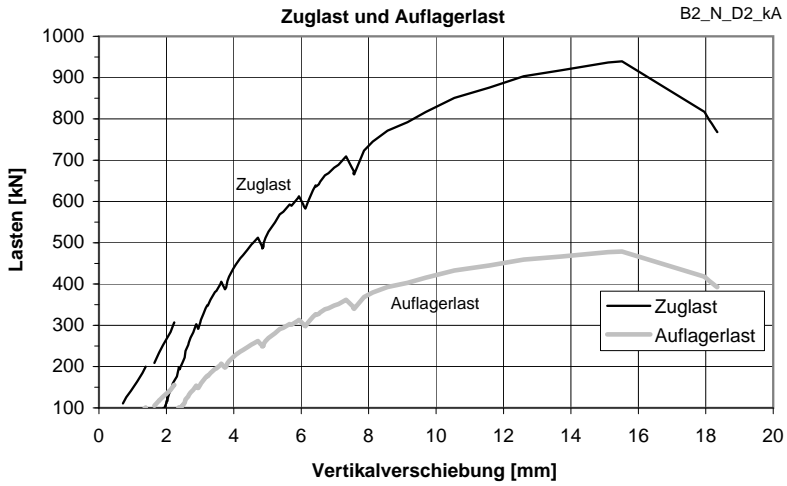


B.20. Versuch B2_N_D2_kA

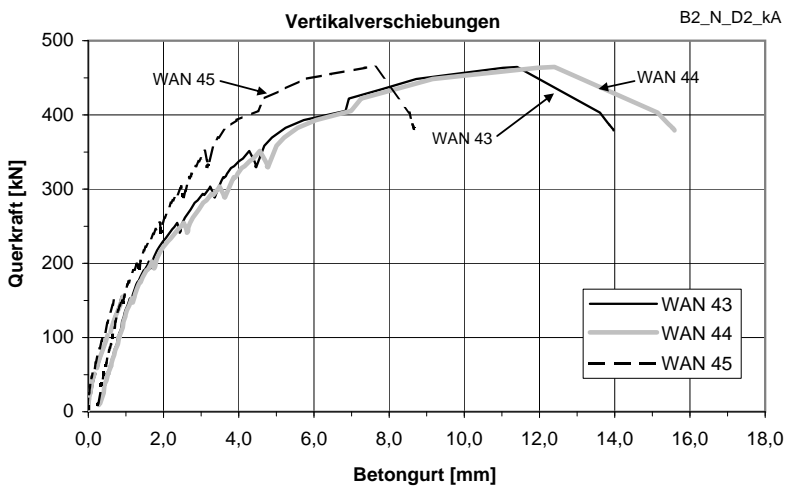
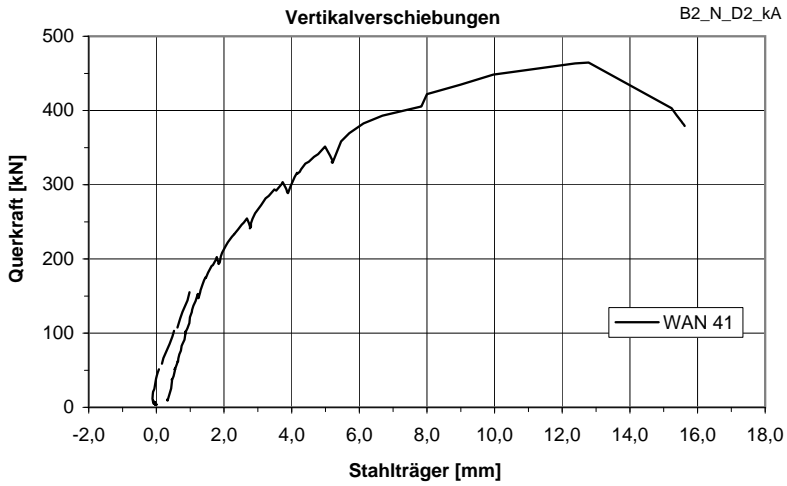
B.20.1. Kräfte

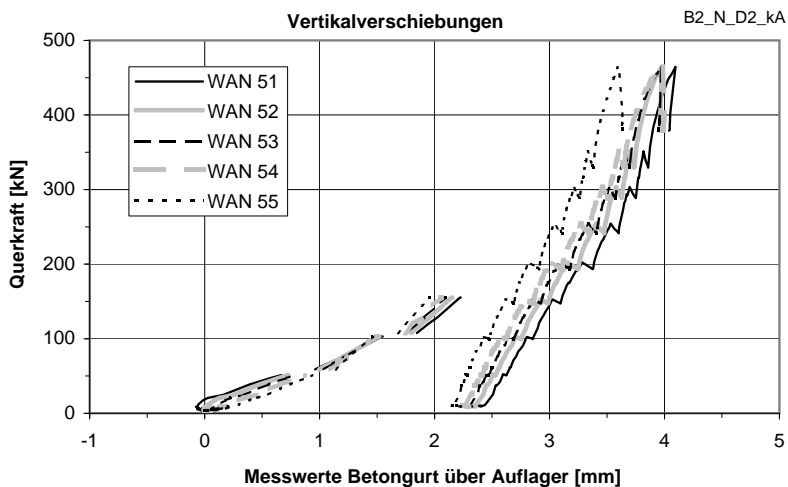
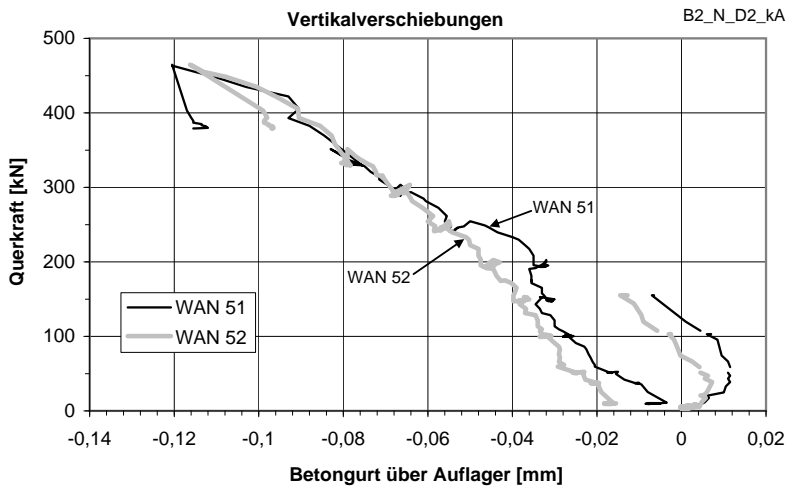
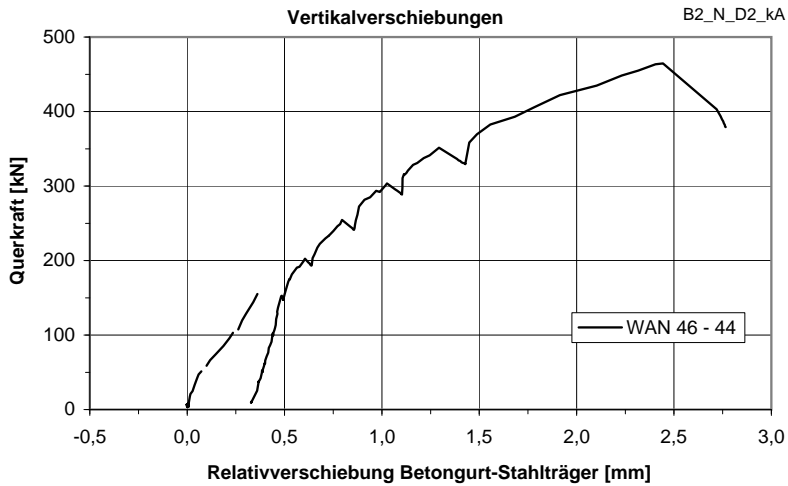




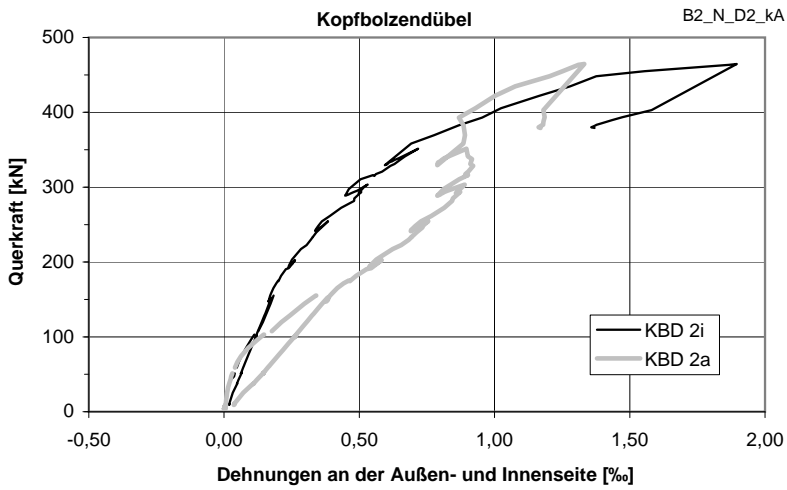
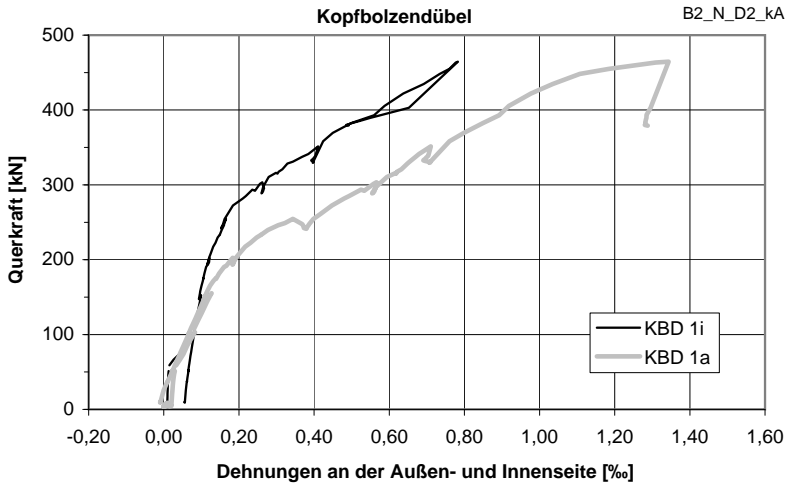


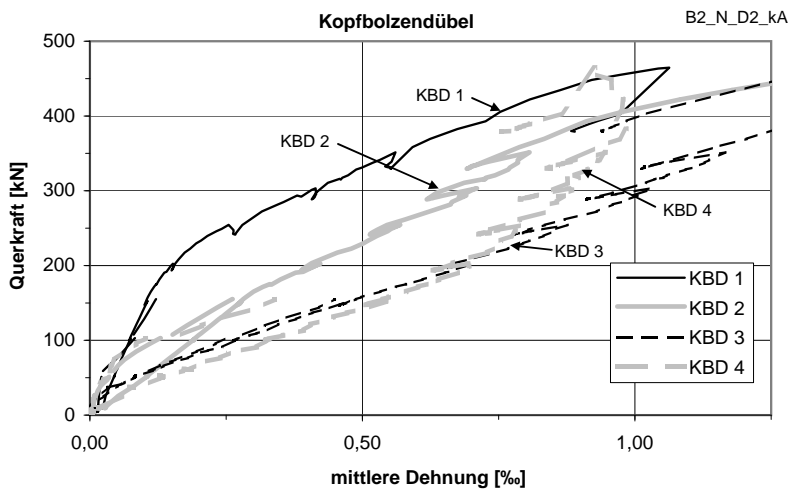
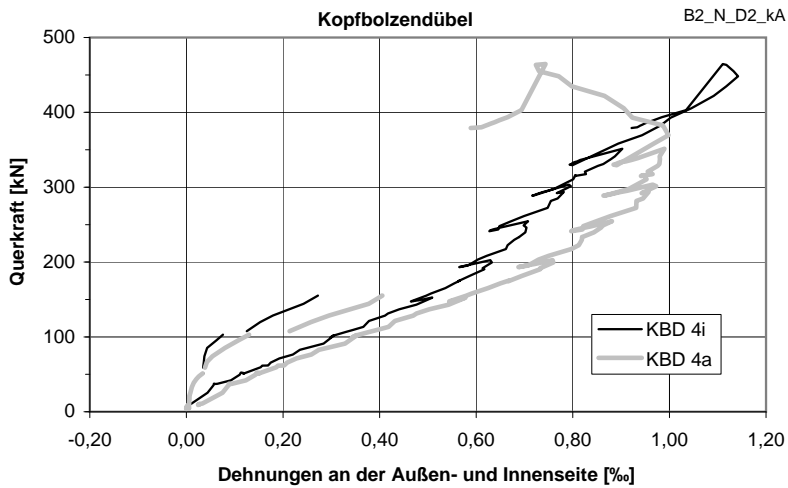
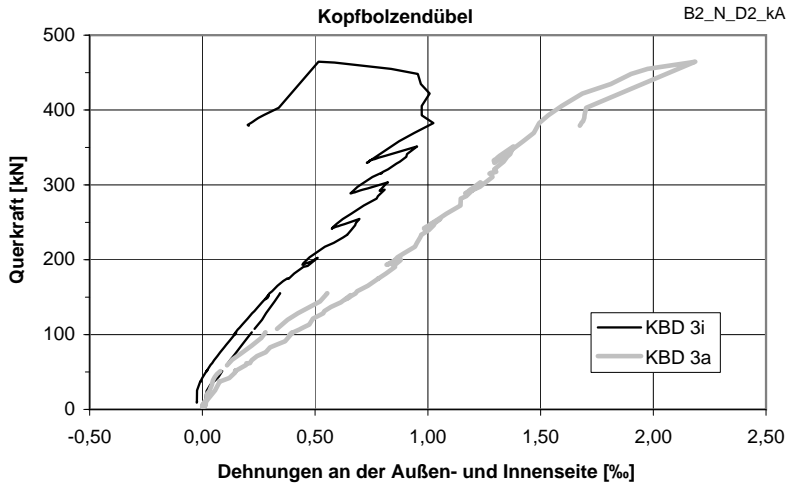
B.20.2. Verformungen

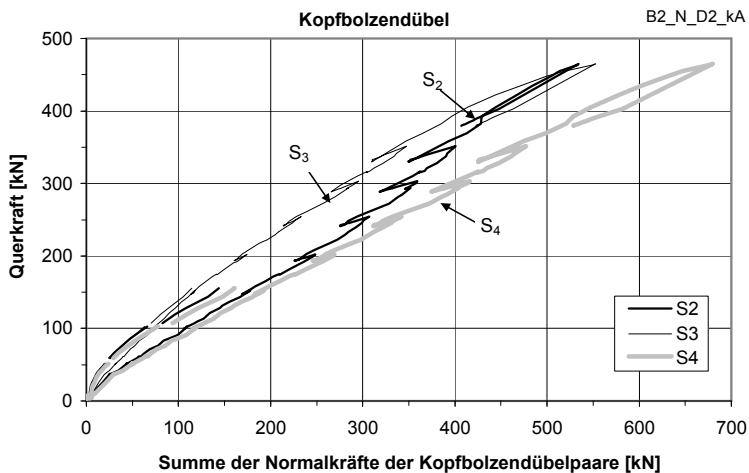
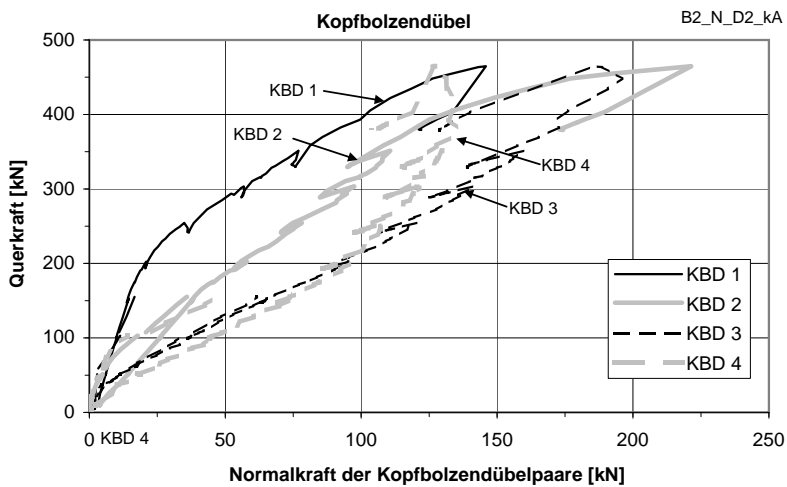
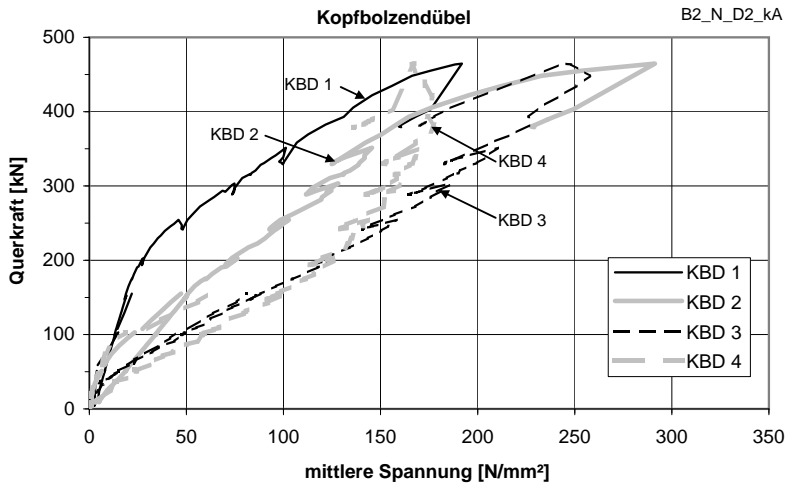




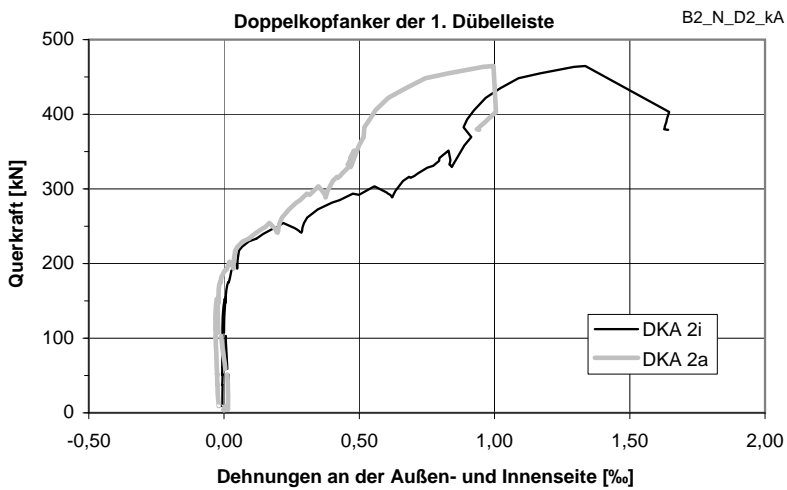
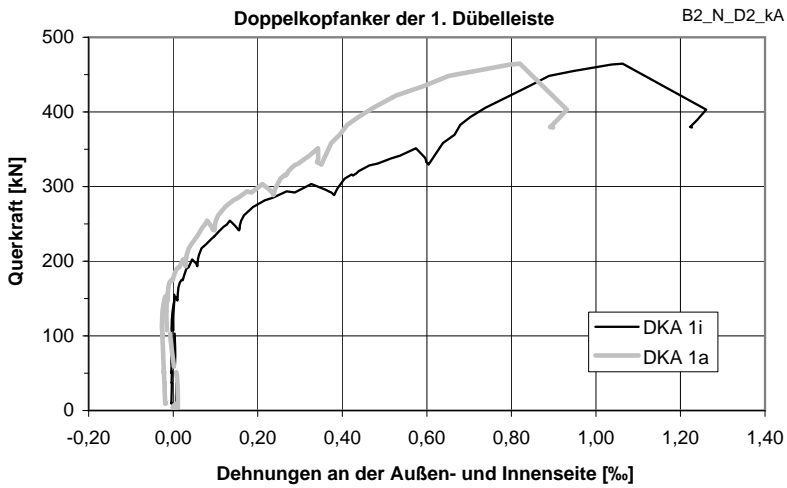
B.20.3. Kopfbolzendübel

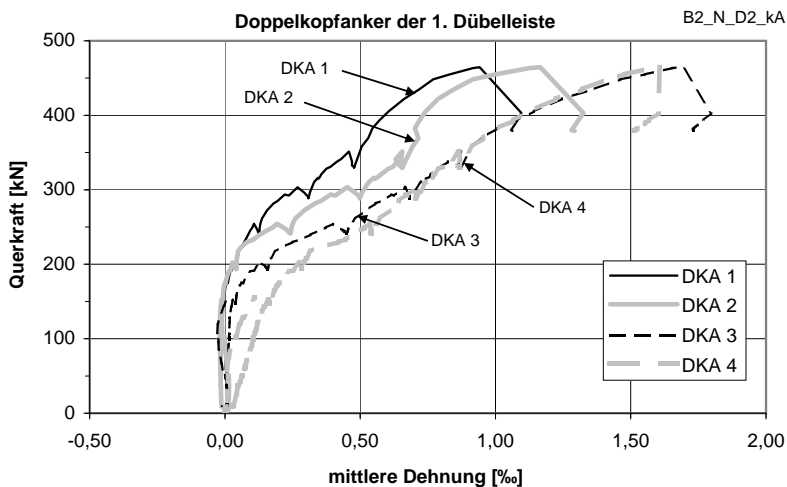
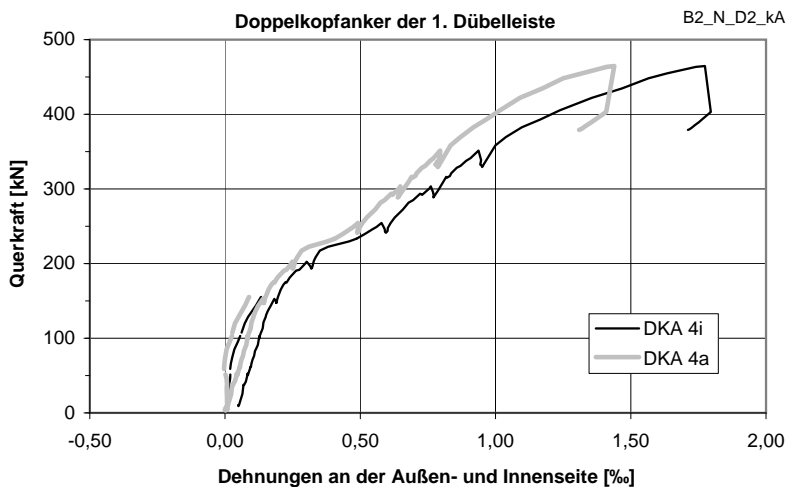
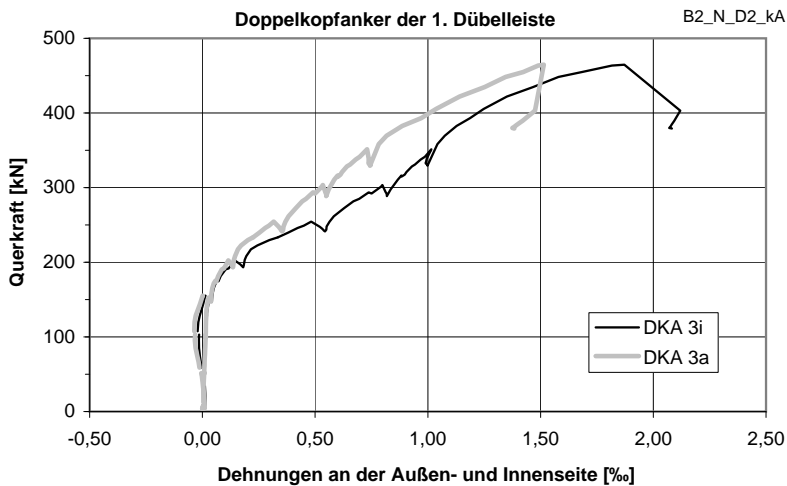


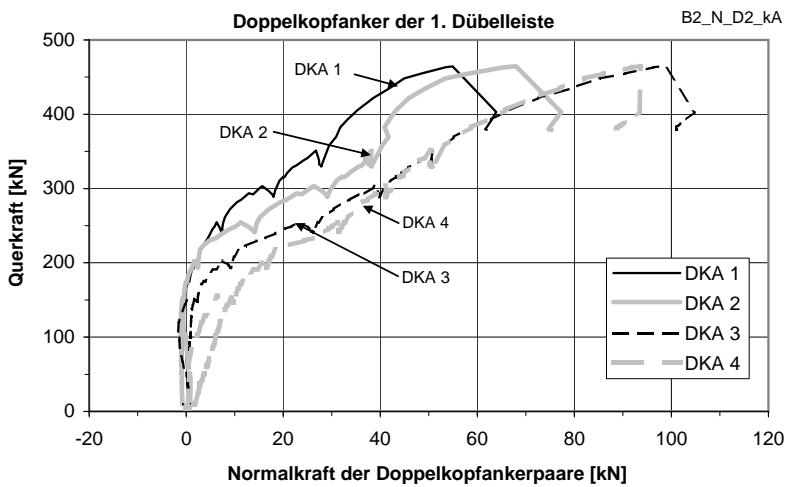
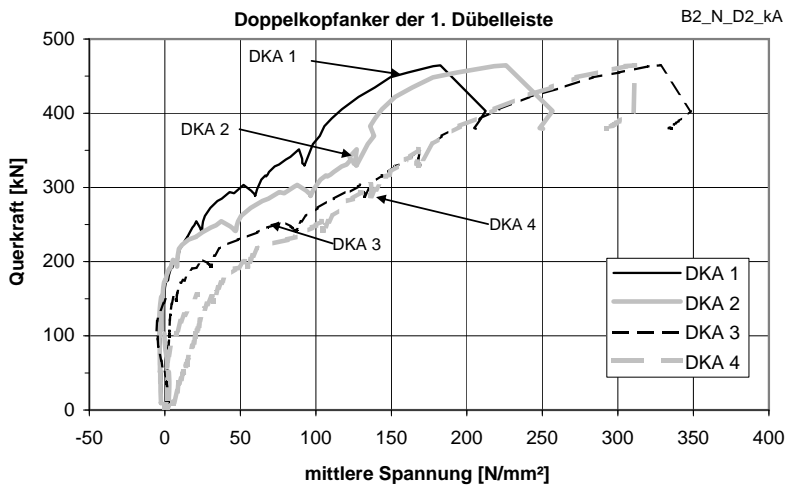




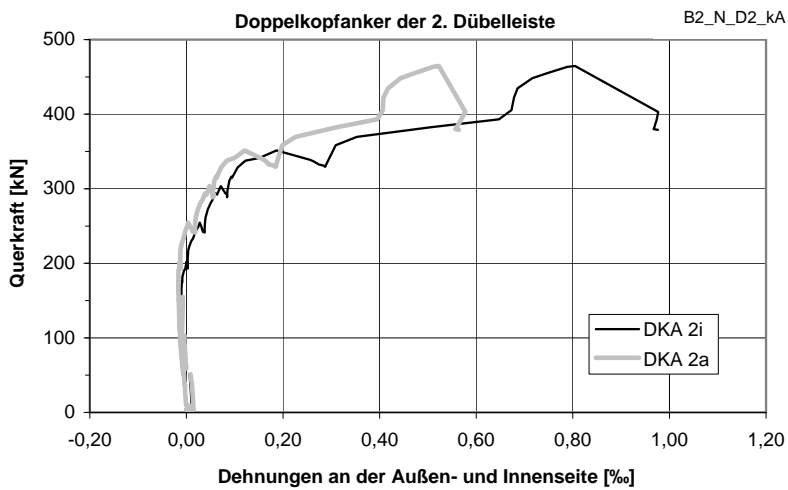
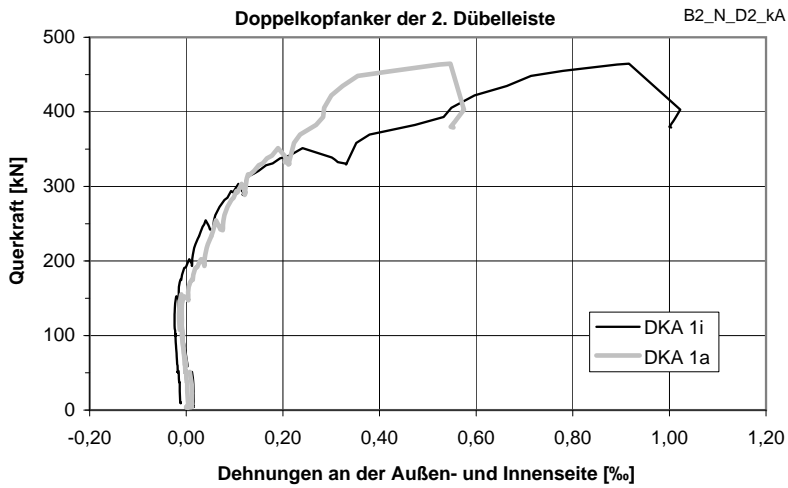
B.20.4. Doppelkopfanker der ersten Dübelleiste

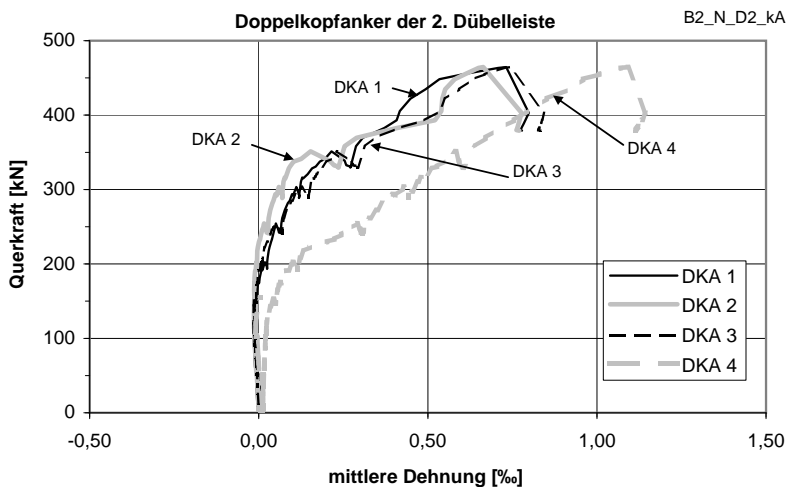
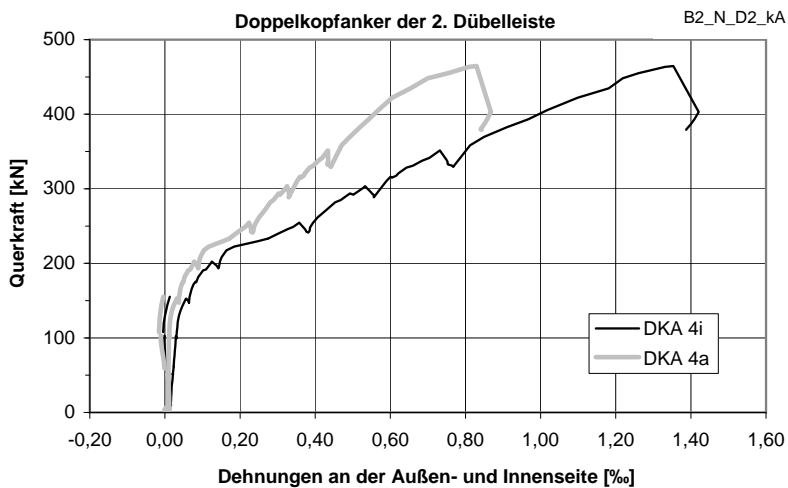
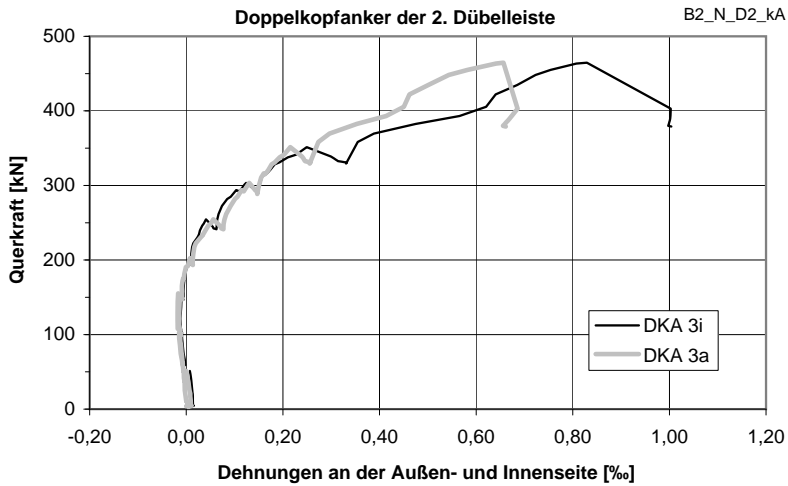


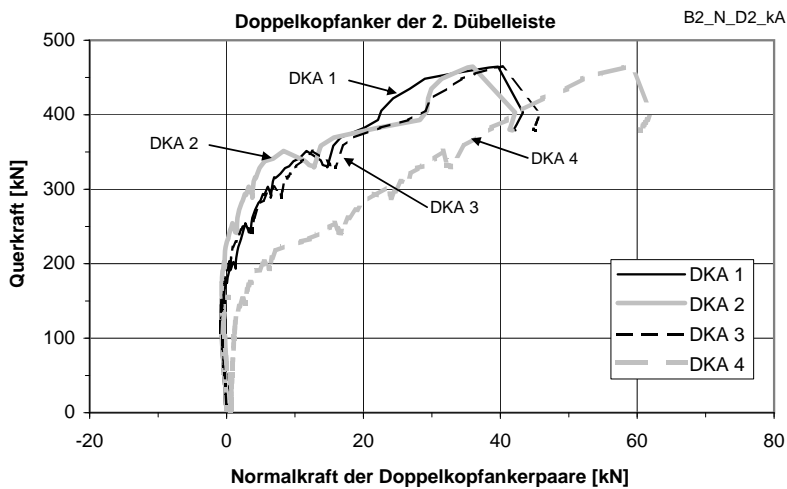
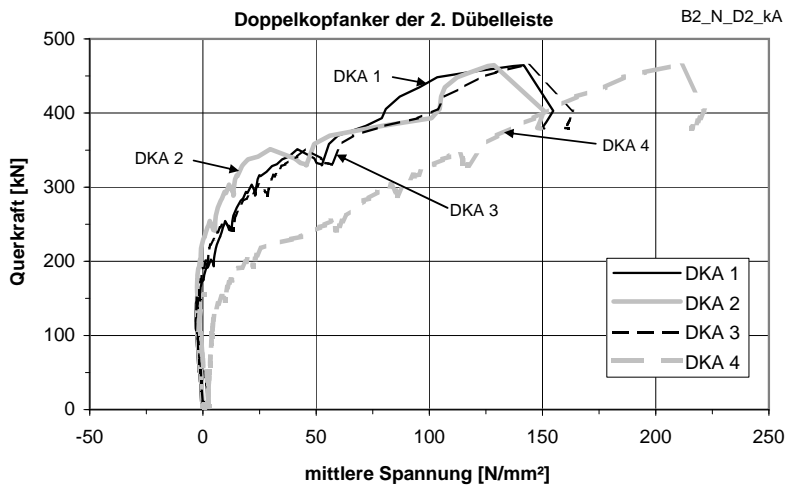




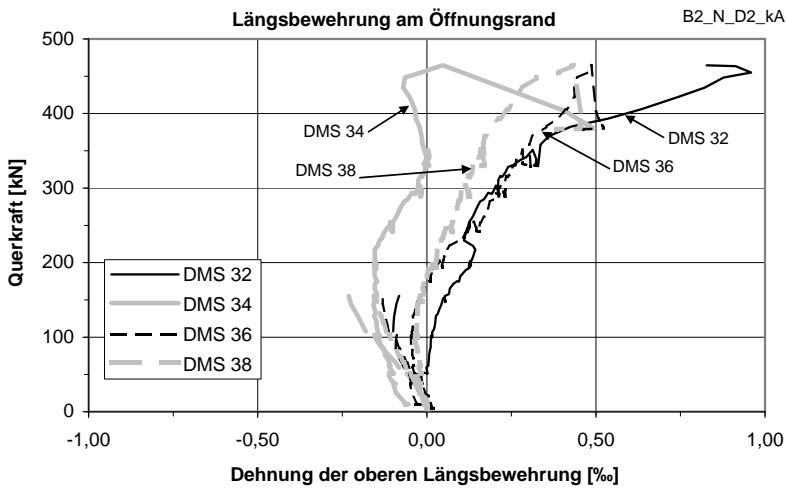
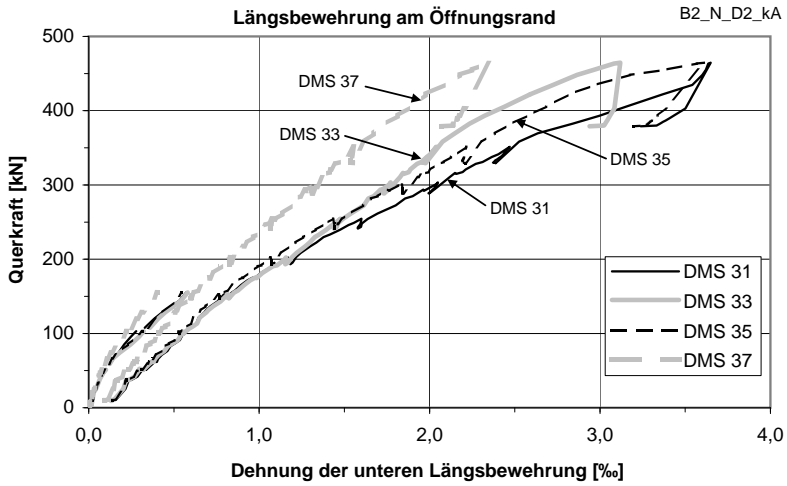
B.20.5. Doppelkopfkanker der zweiten Dübelleiste

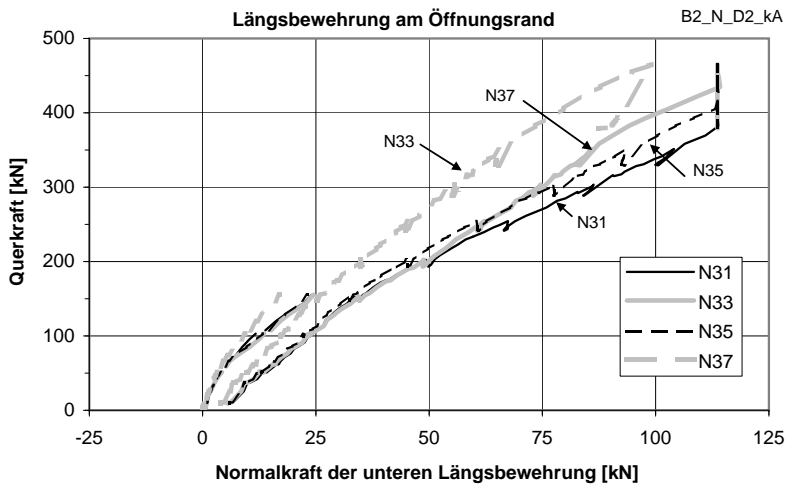
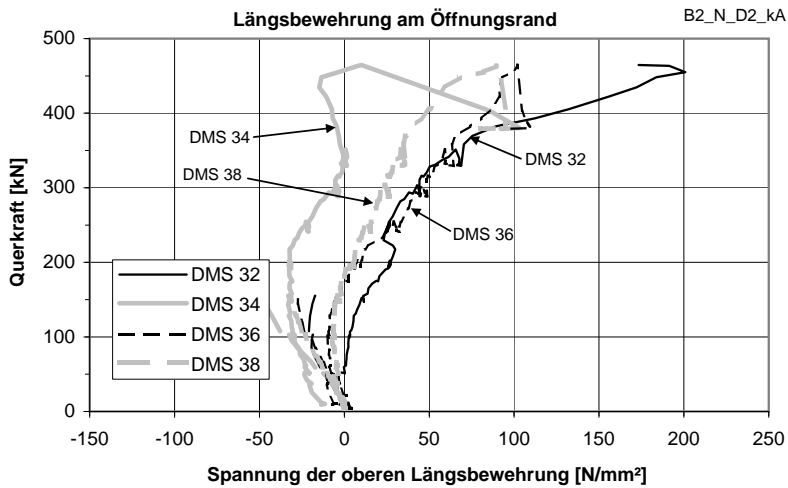
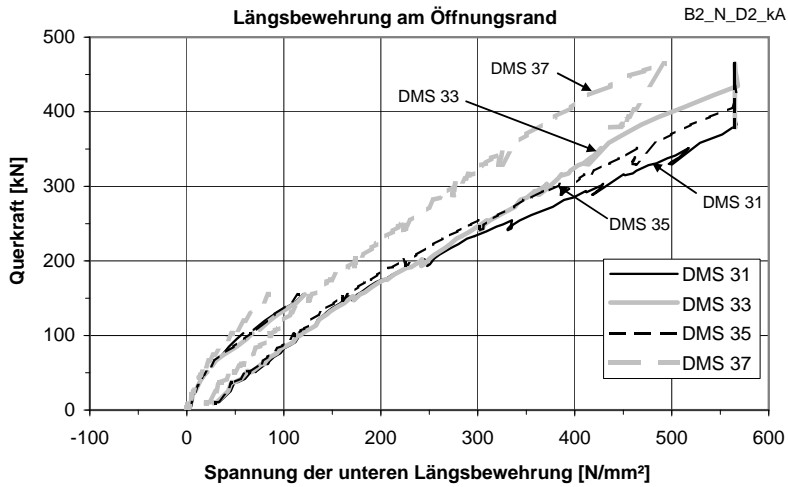


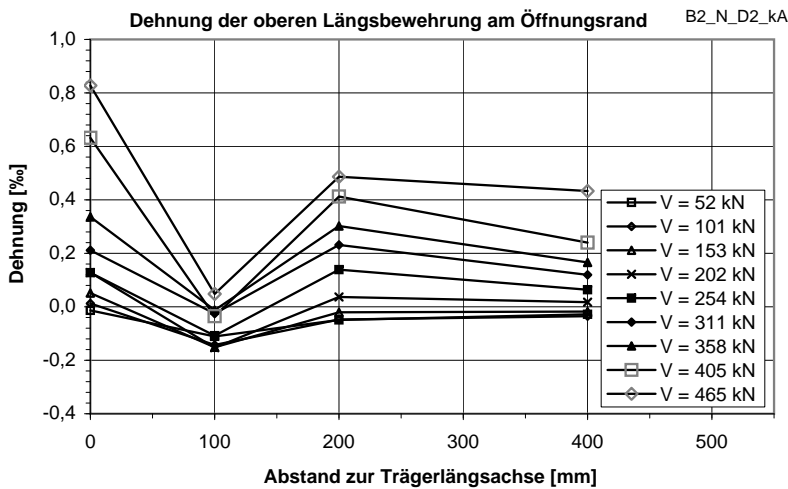
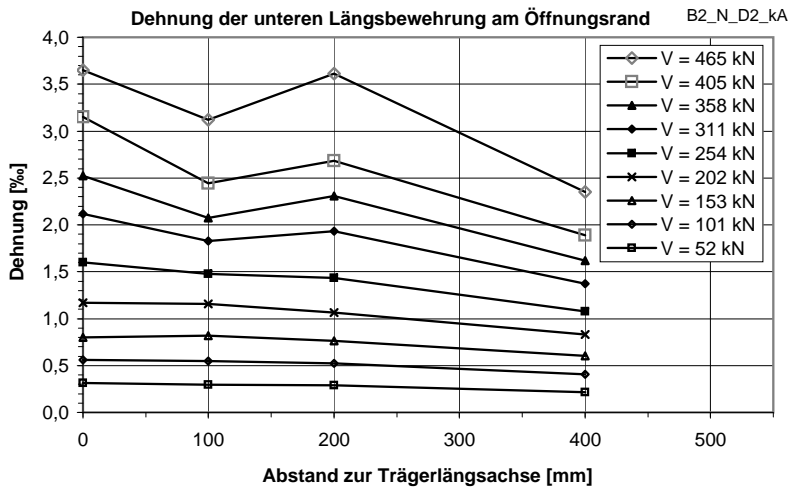
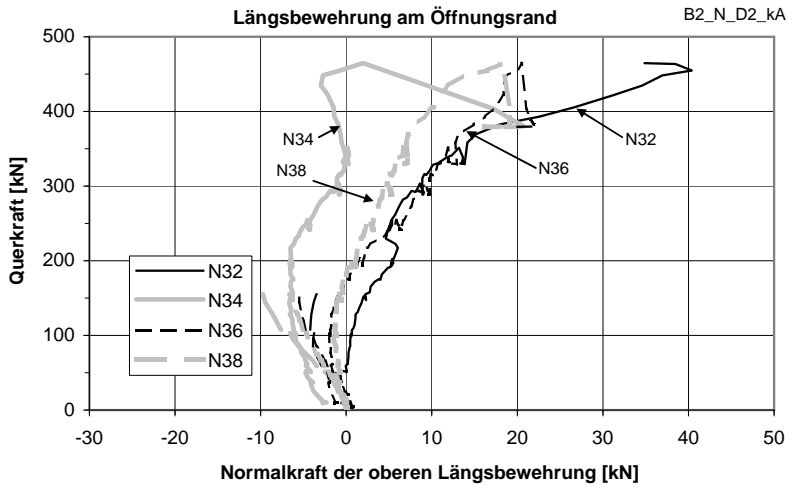


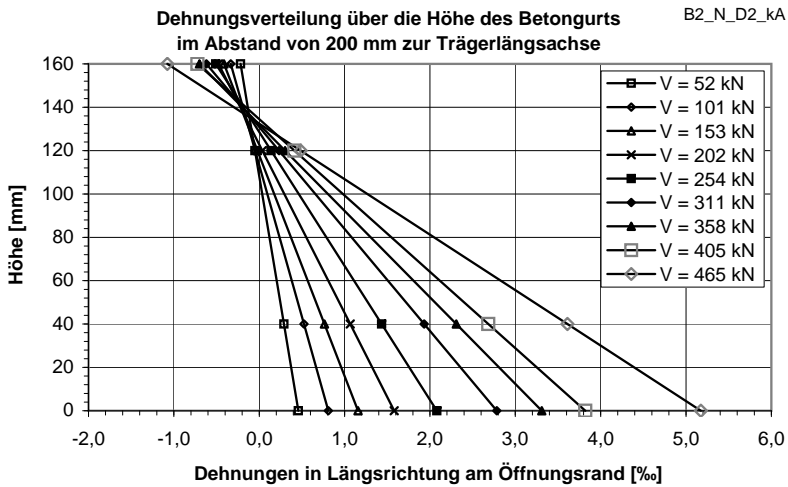
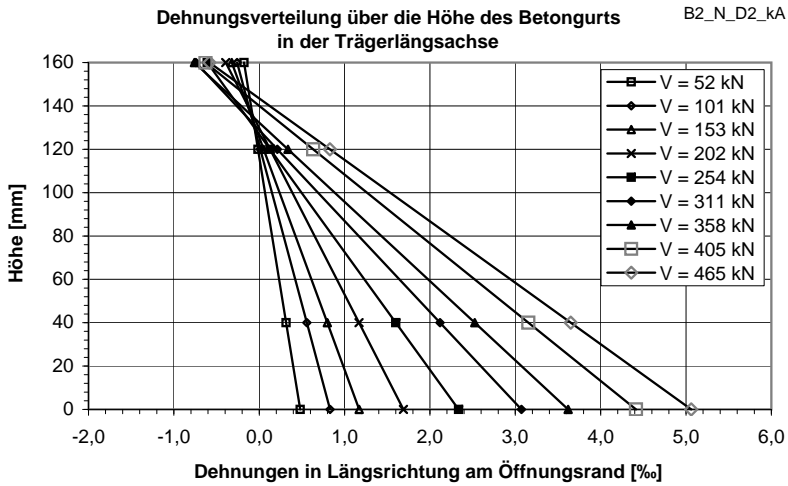


B.20.6. Längsbewehrung

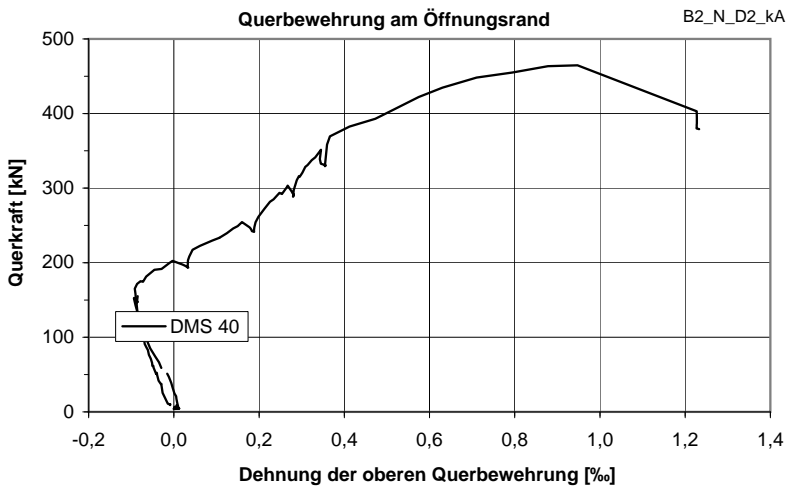
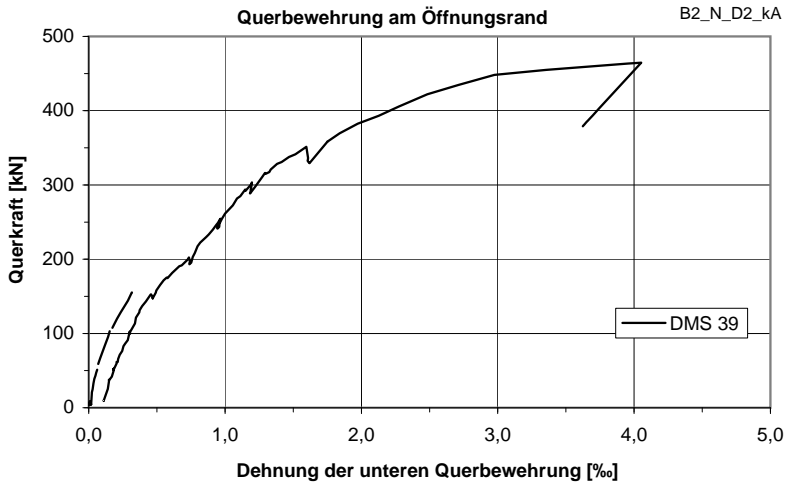


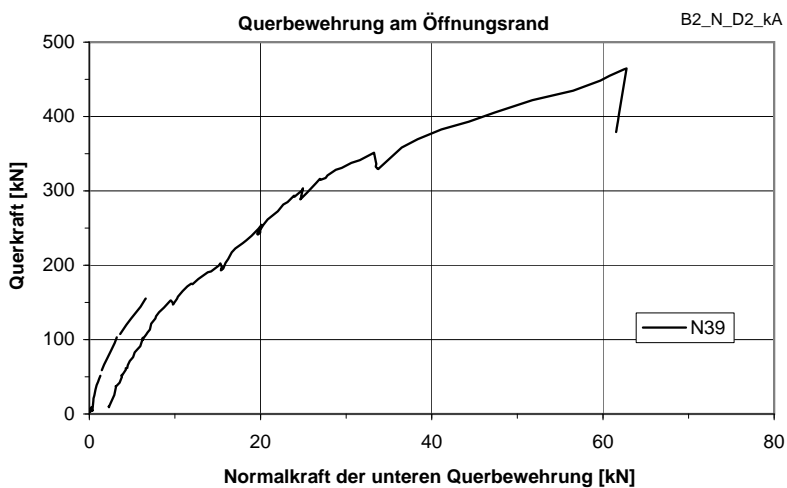
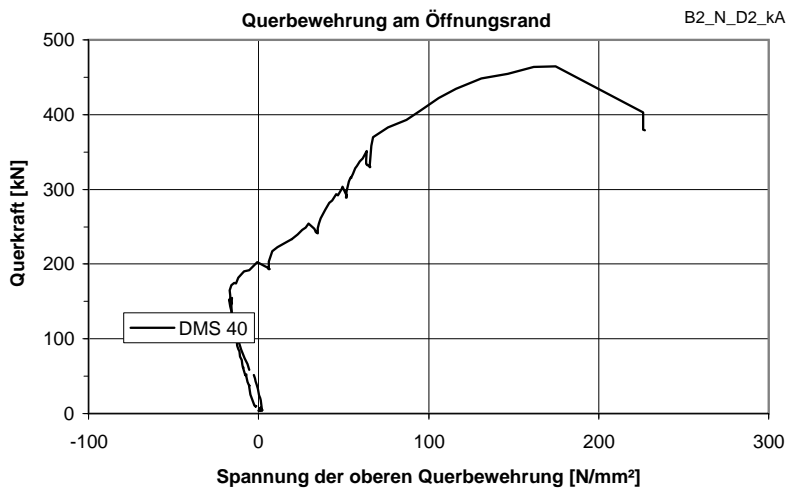
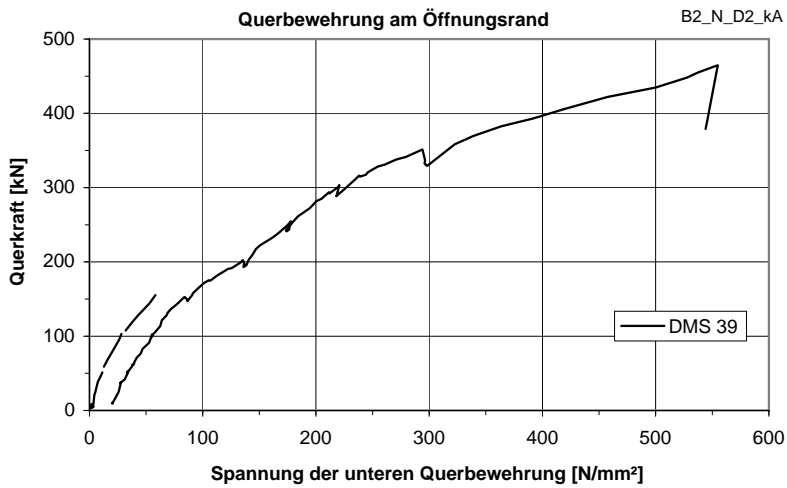


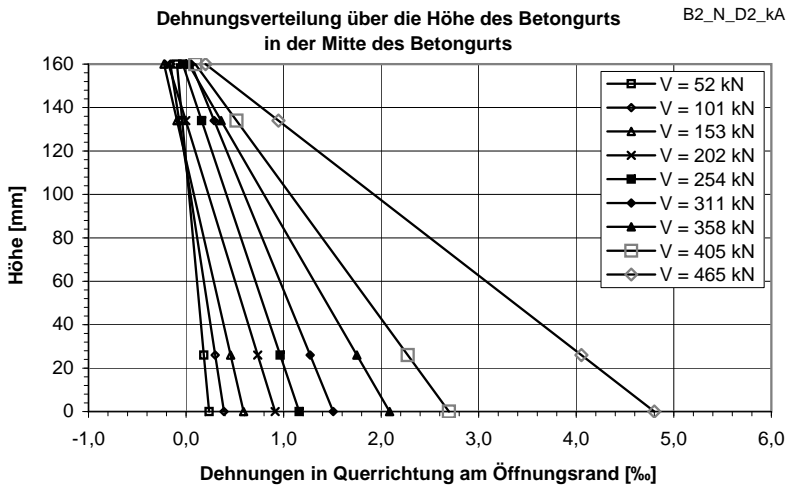
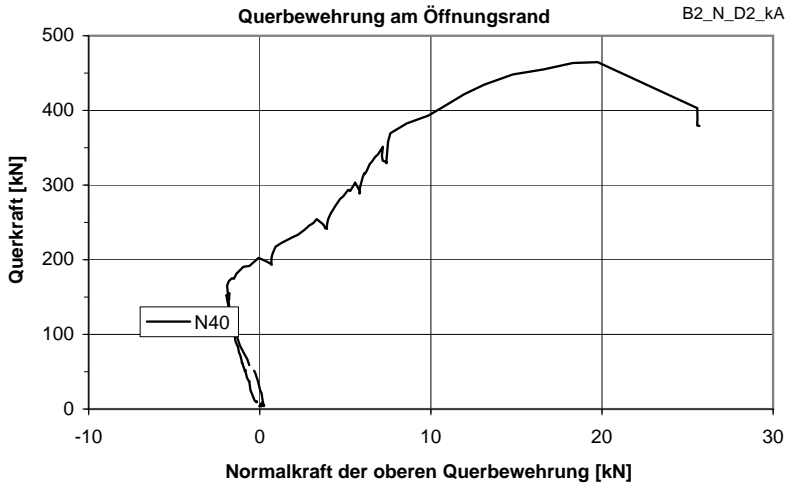




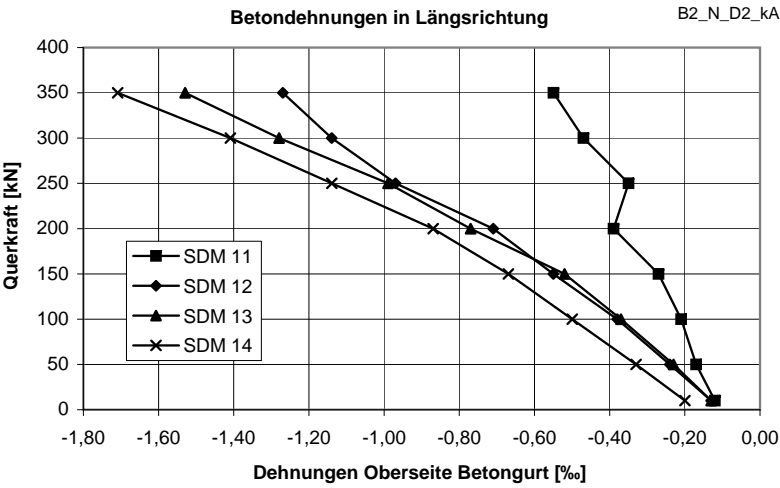
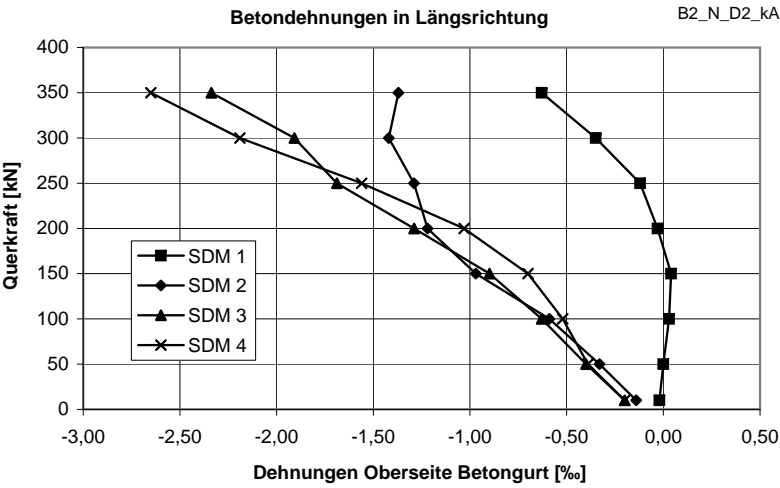
B.20.7. Querbewehrung

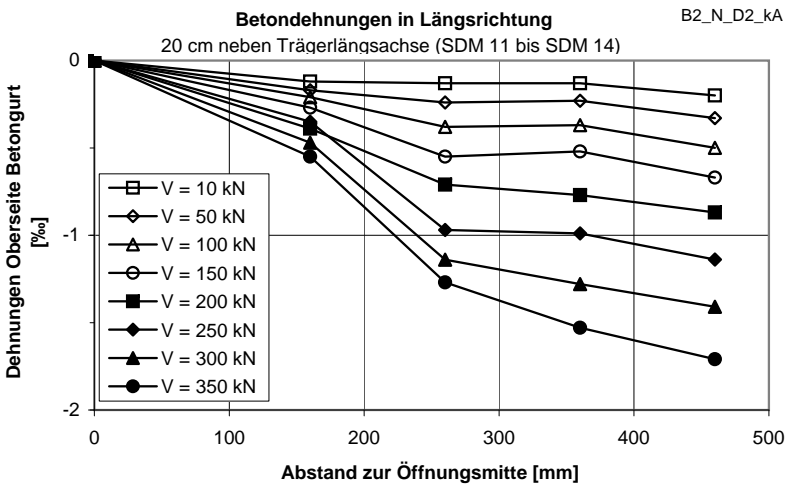
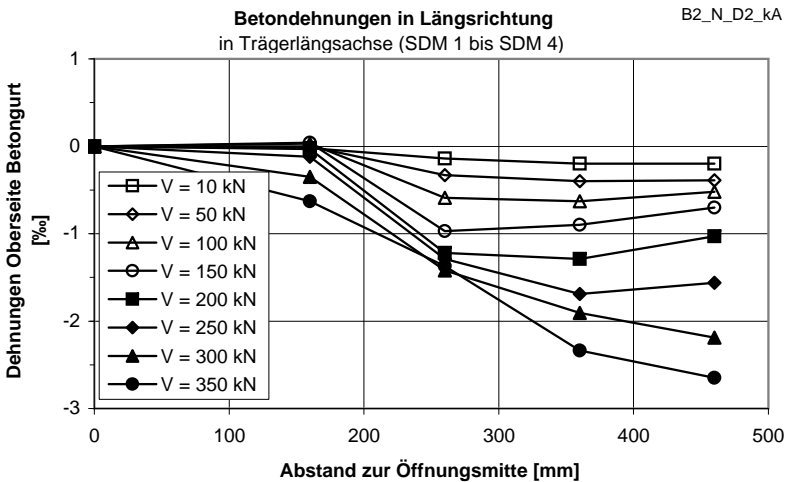
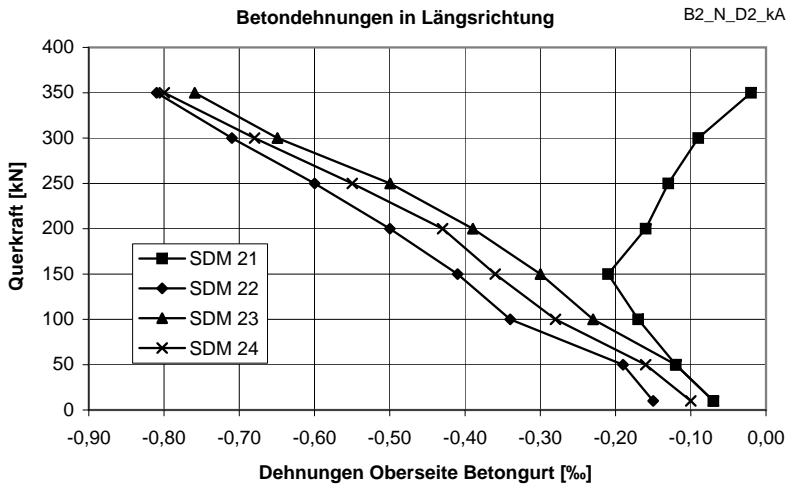


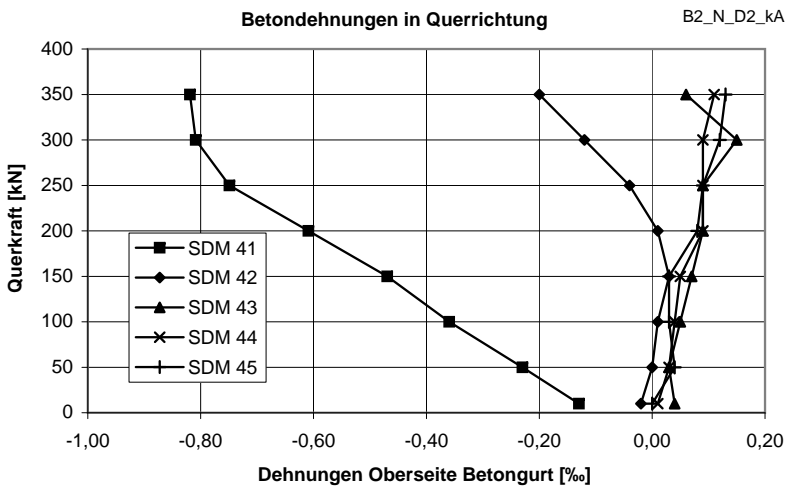
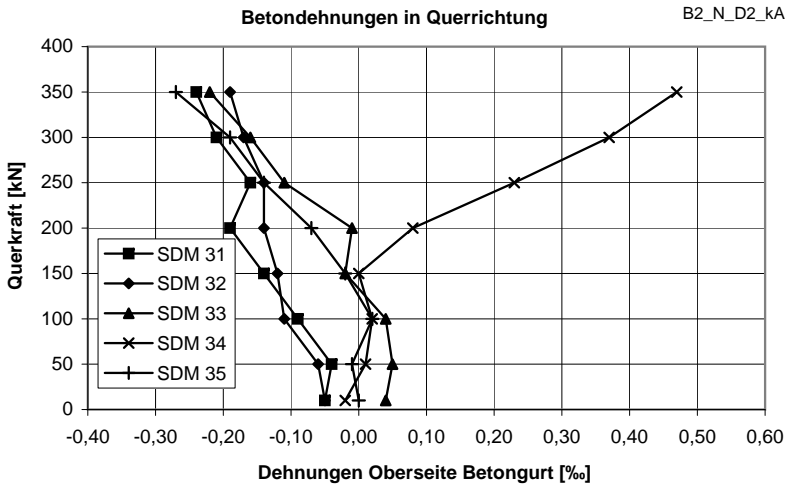
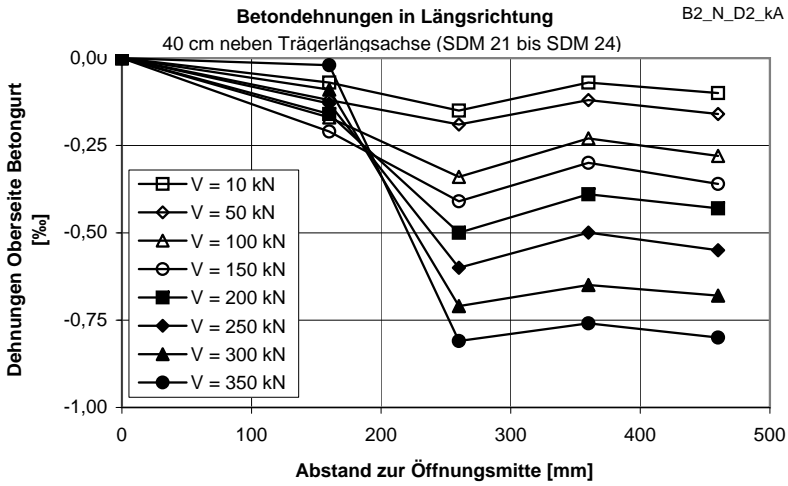


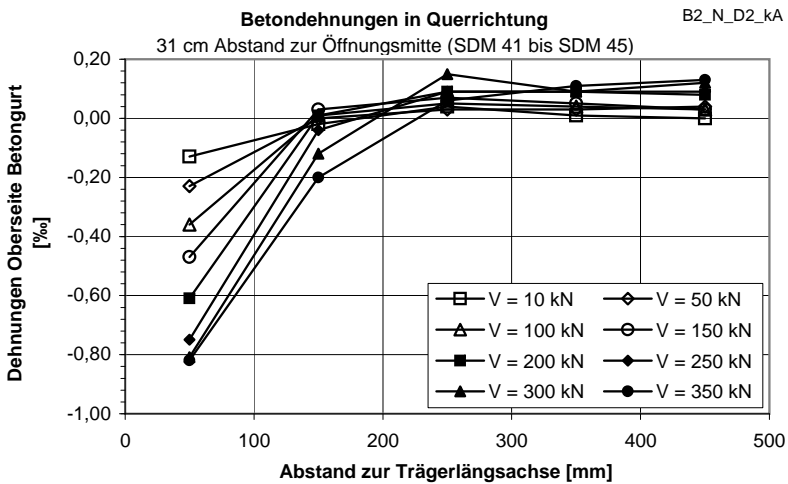
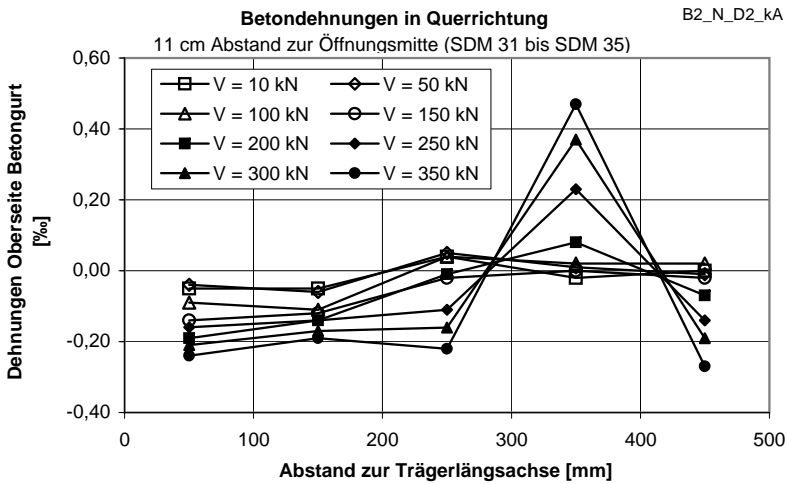
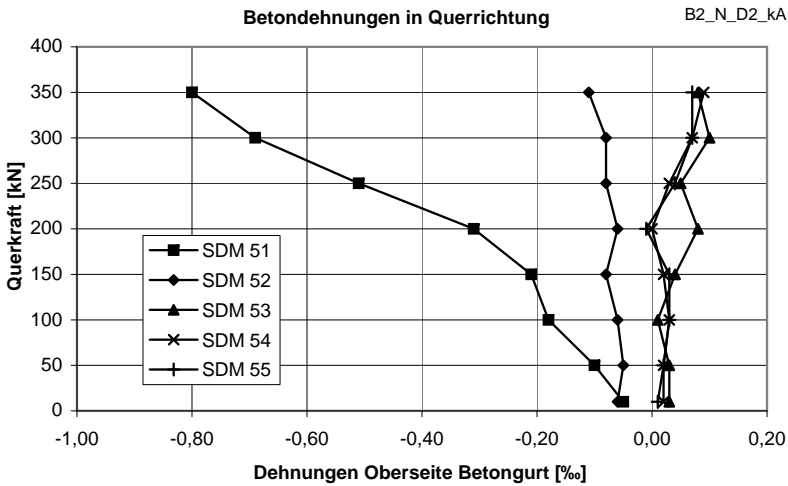


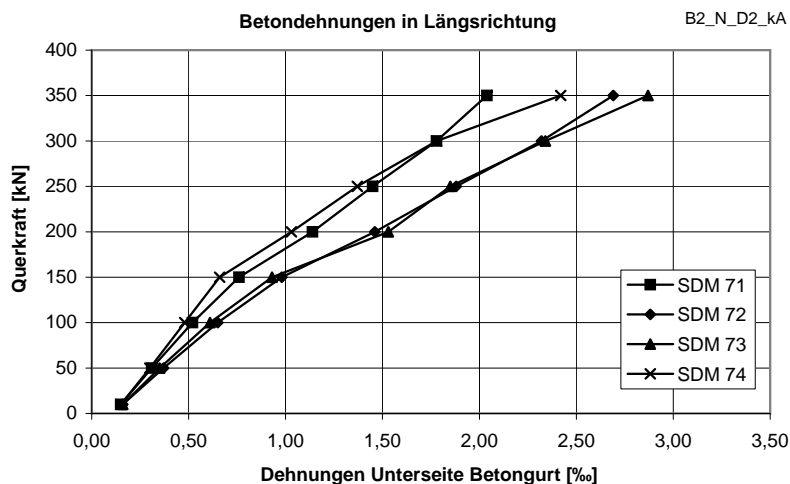
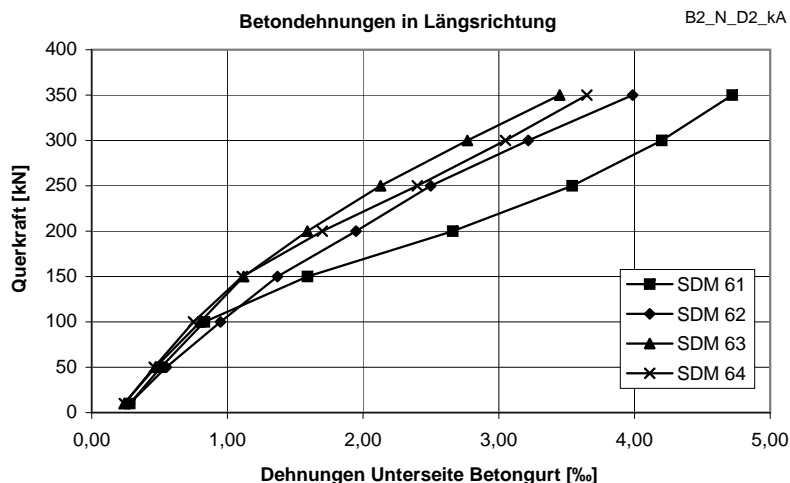
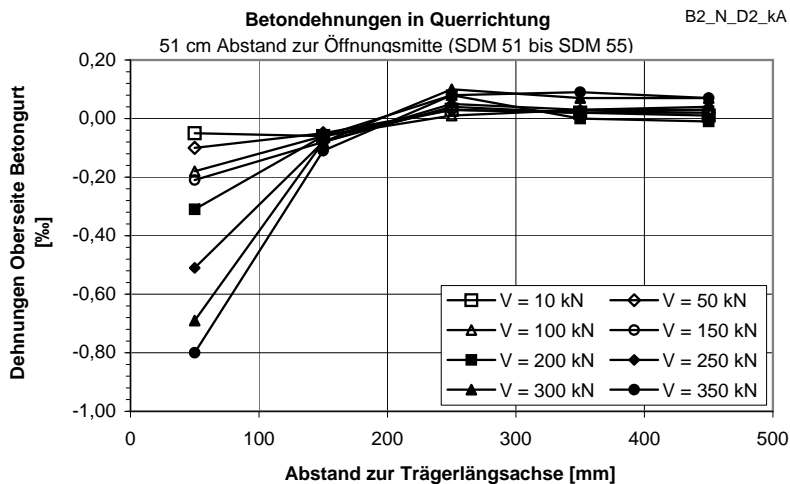
B.20.8. Betondehnungen

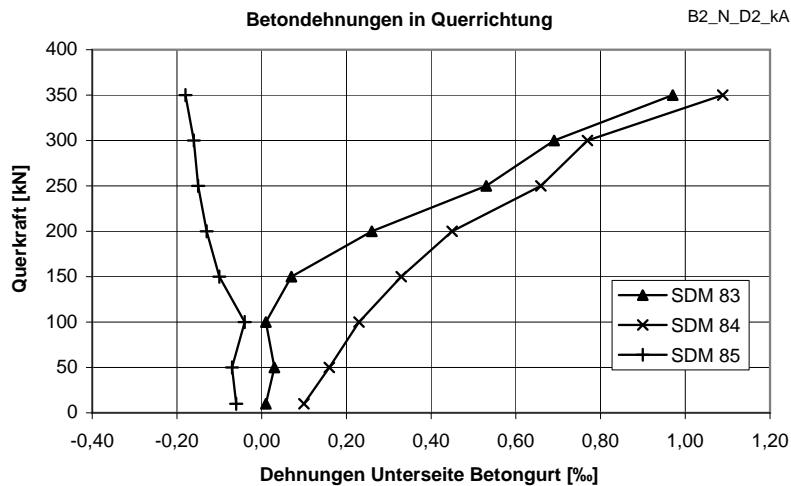
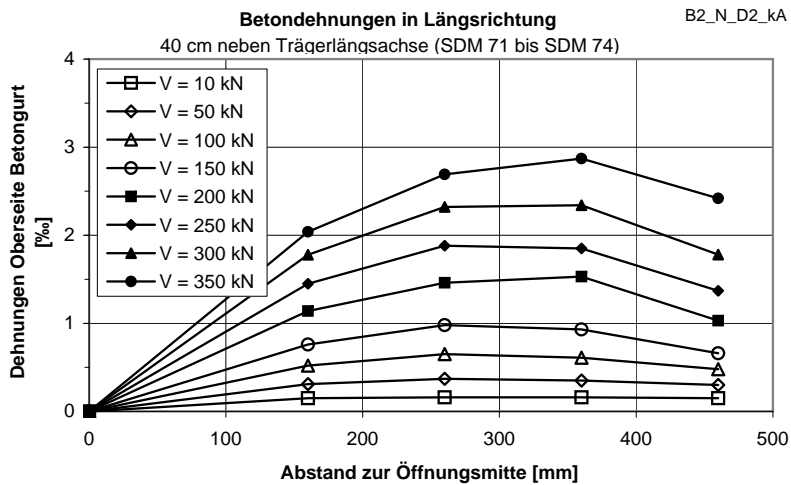
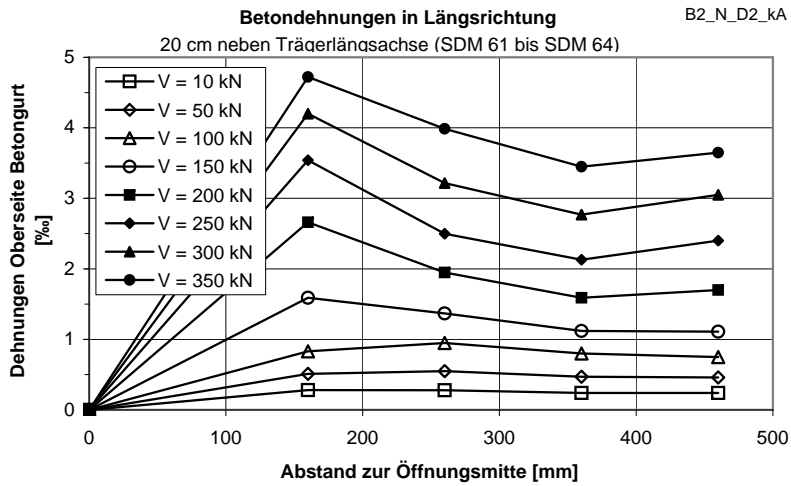


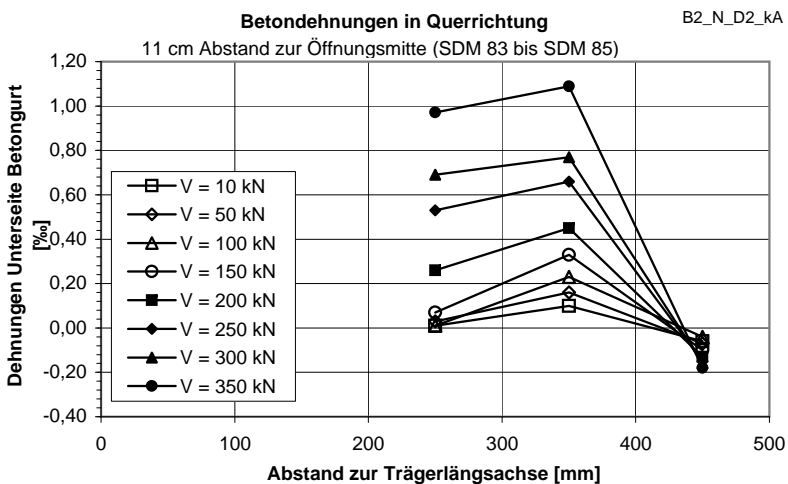
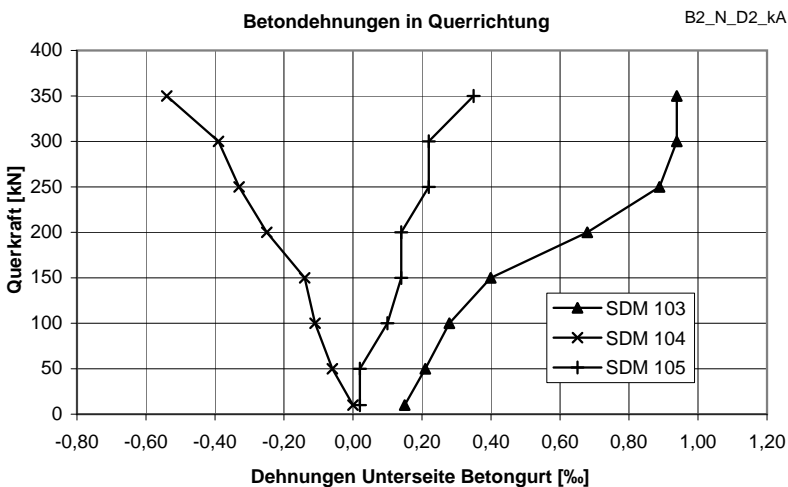
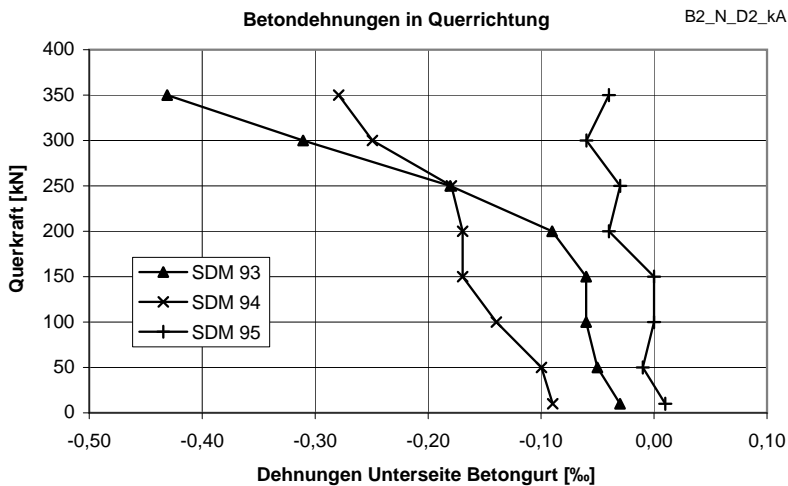


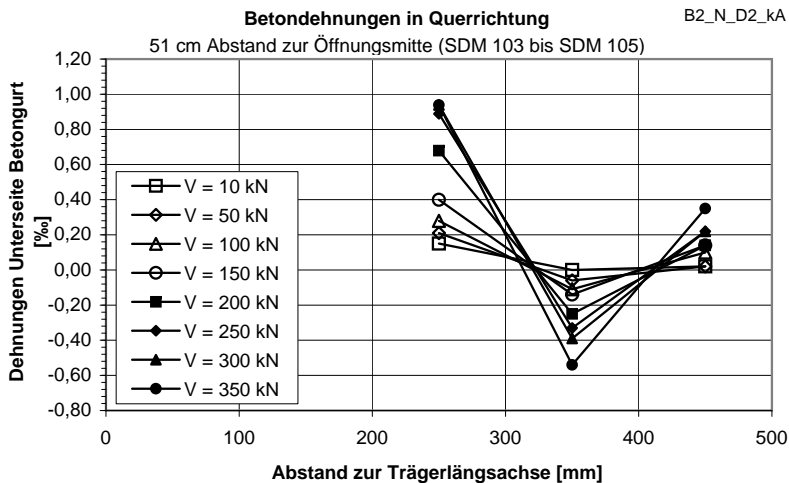
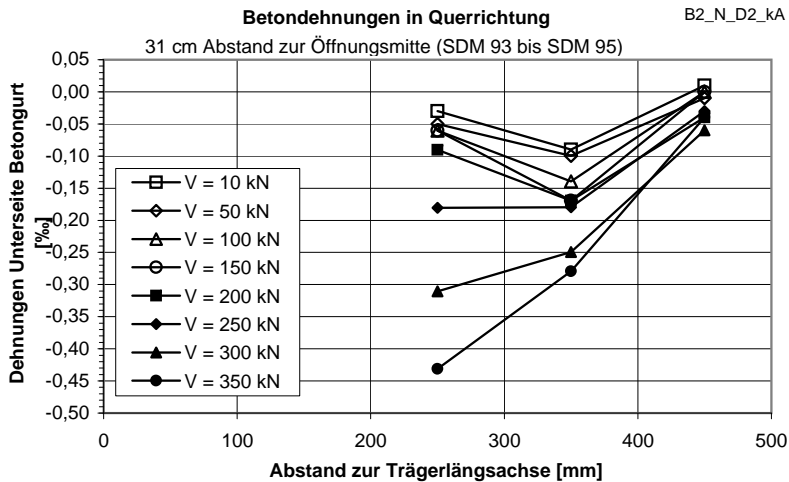






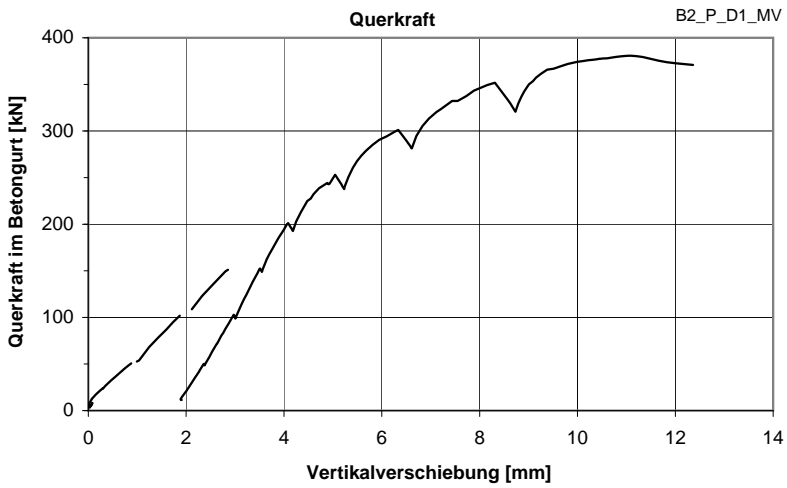
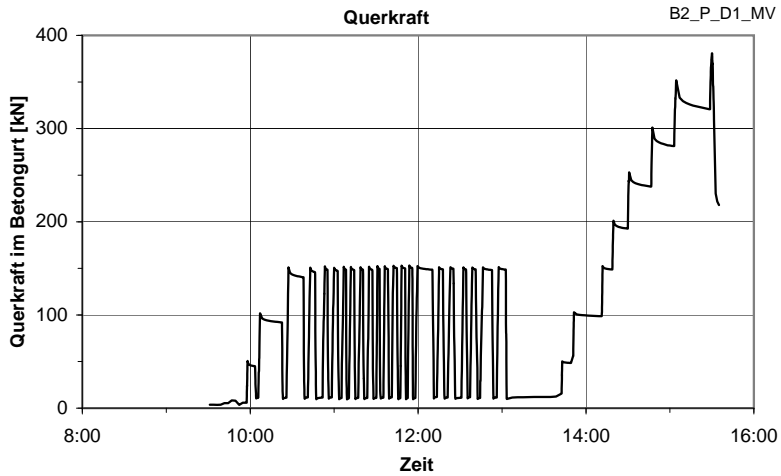


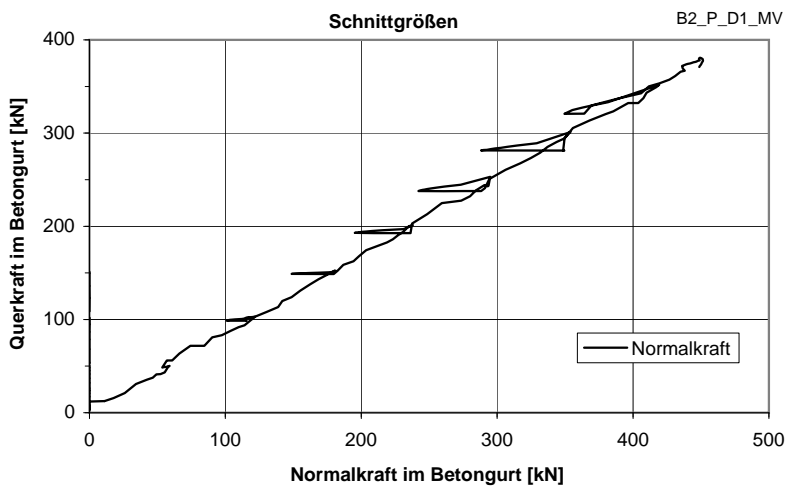
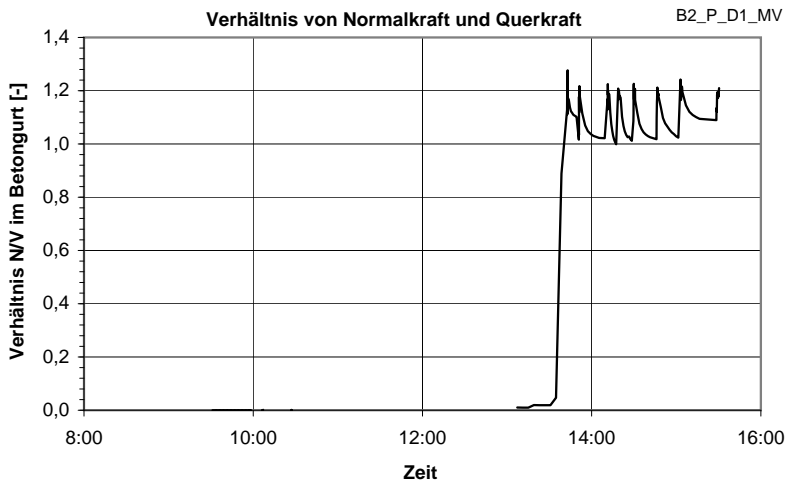
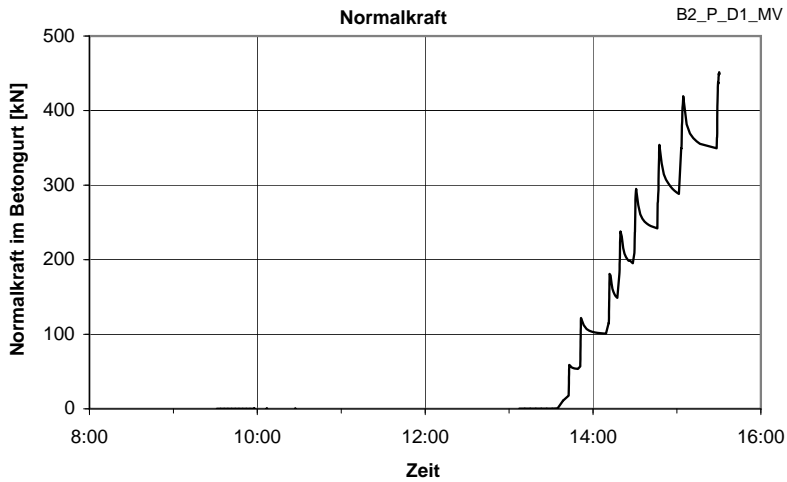


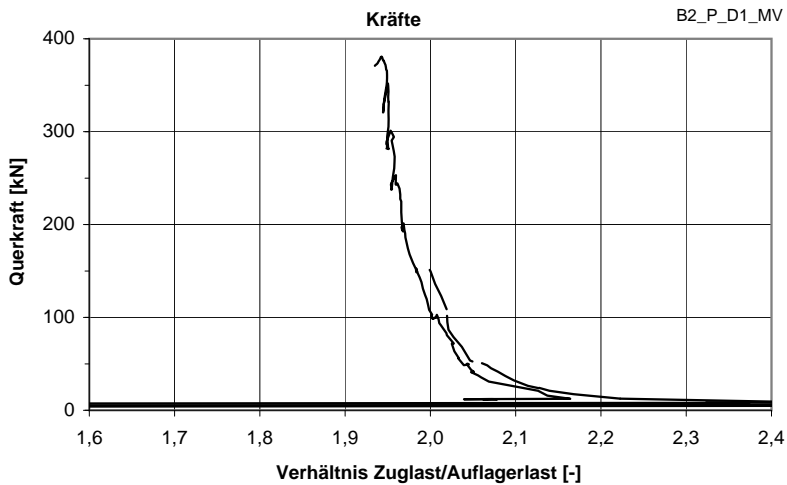
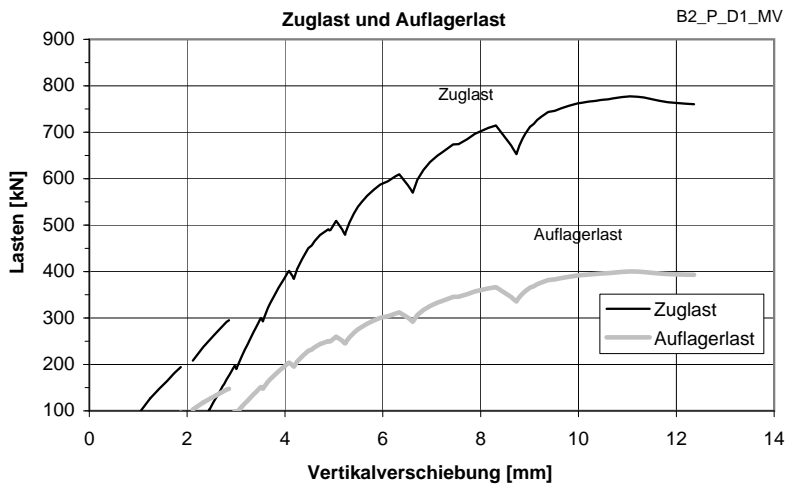


B.21. Versuch B2_P_D1_MV

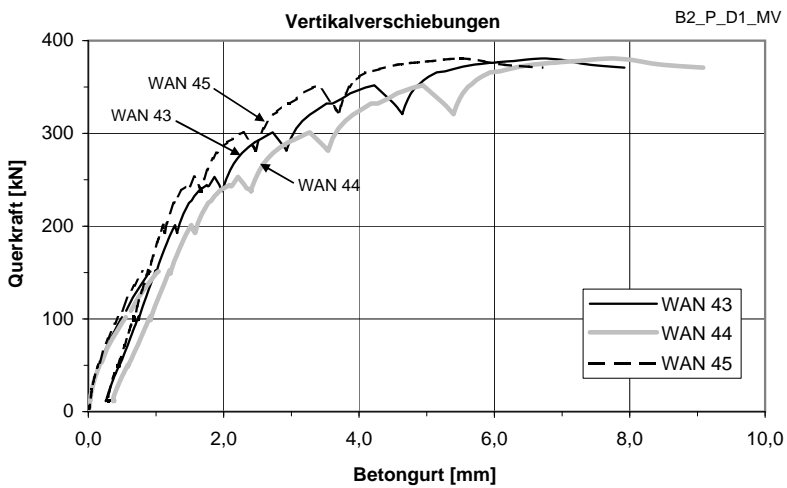
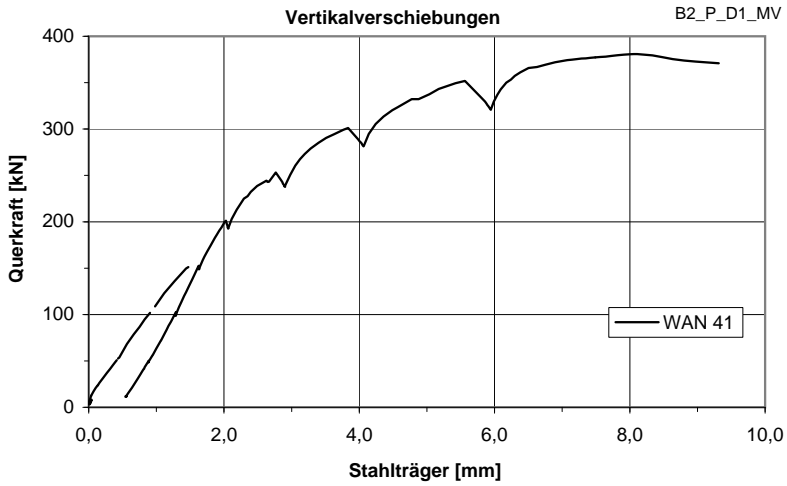
B.21.1. Kräfte

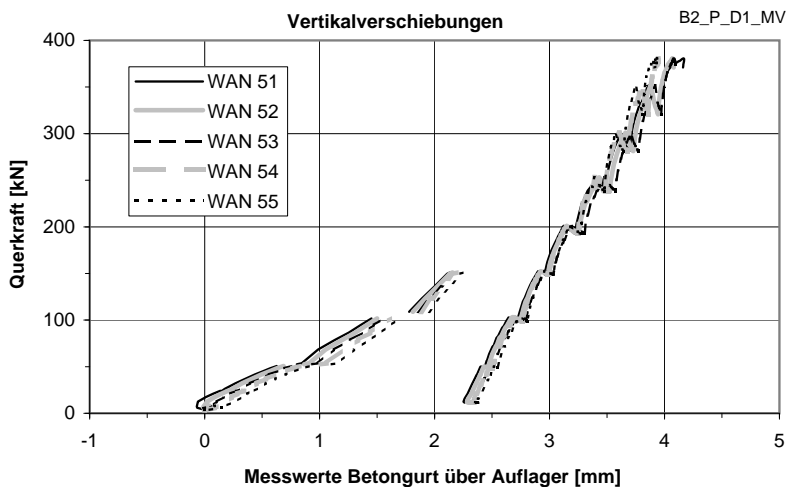
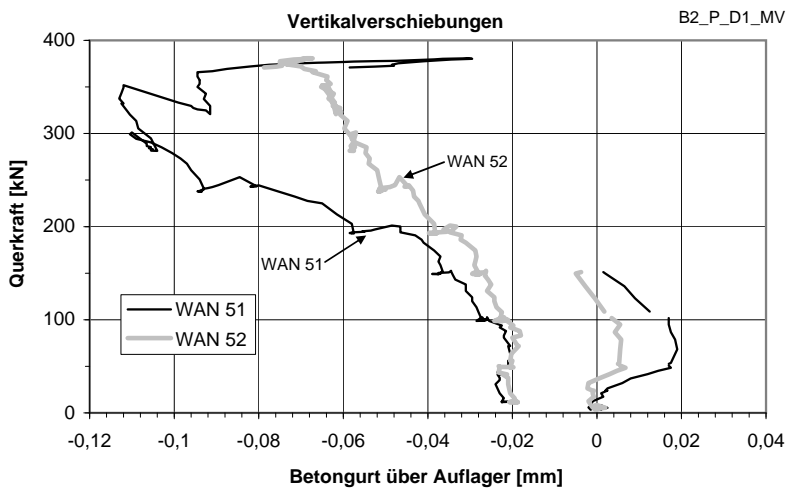
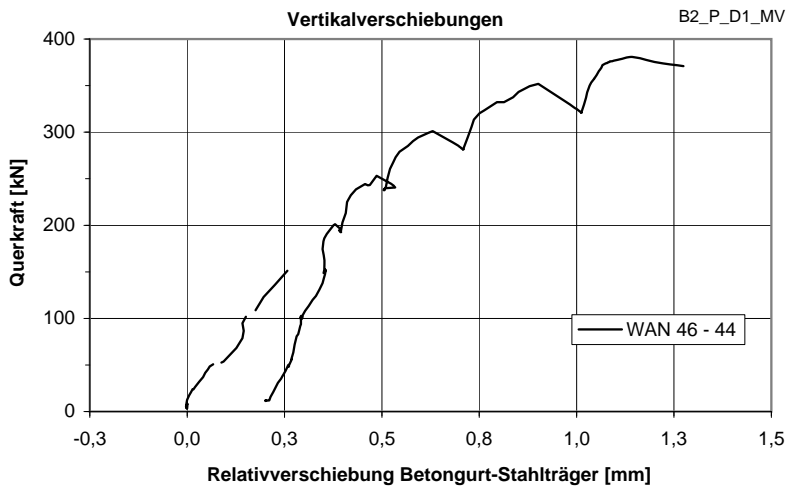




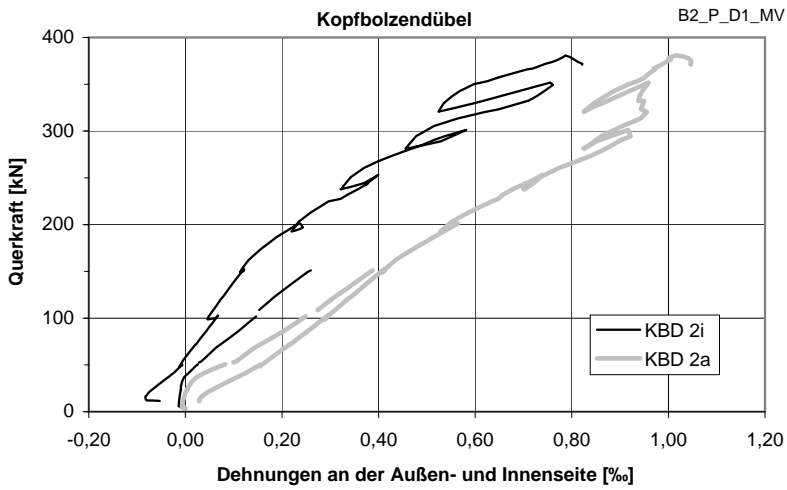
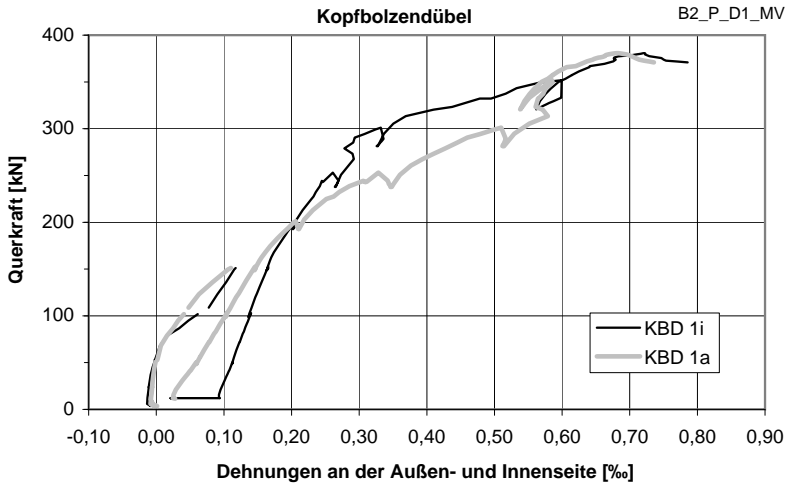


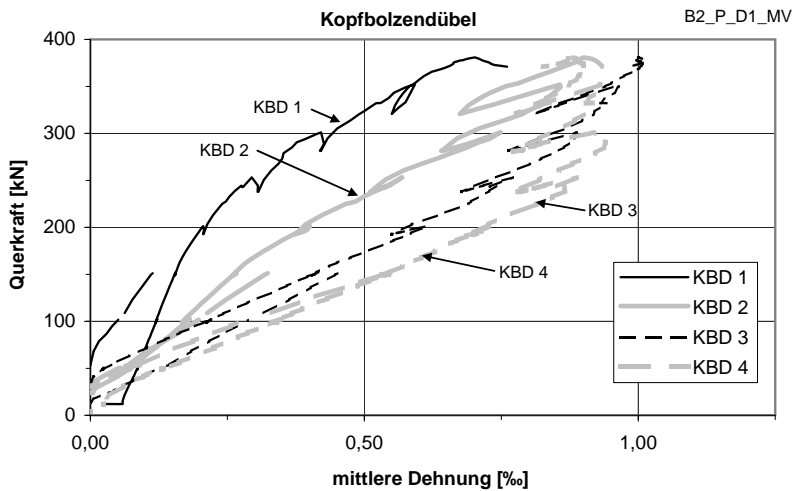
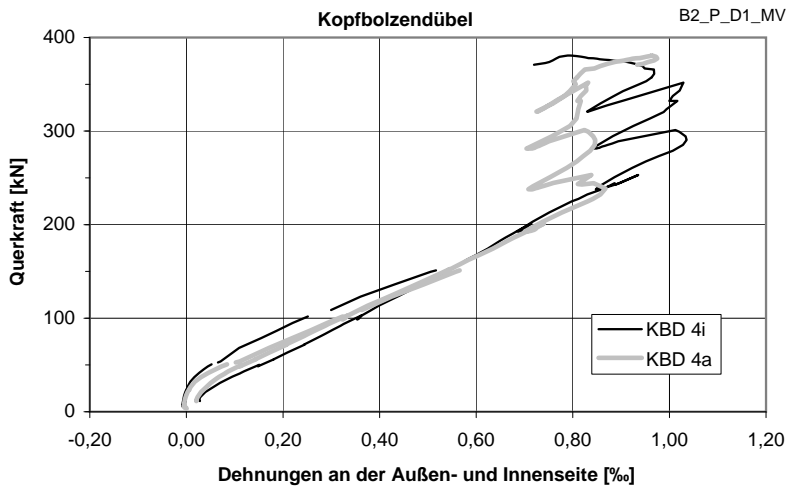
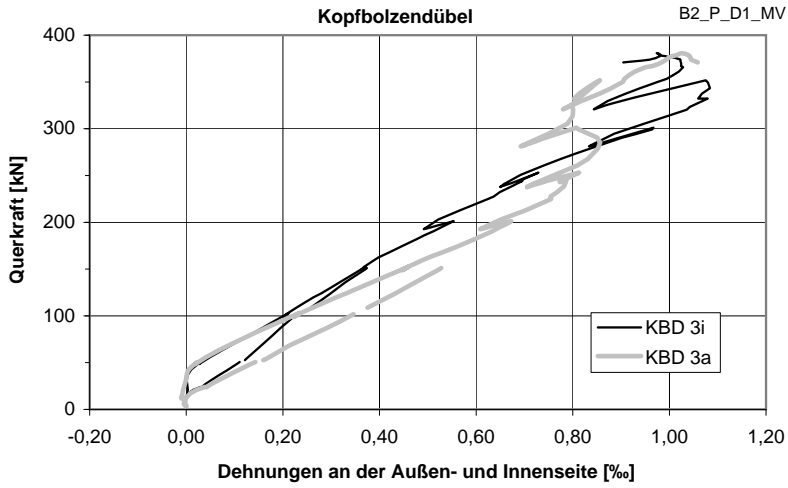
B.21.2. Verformungen

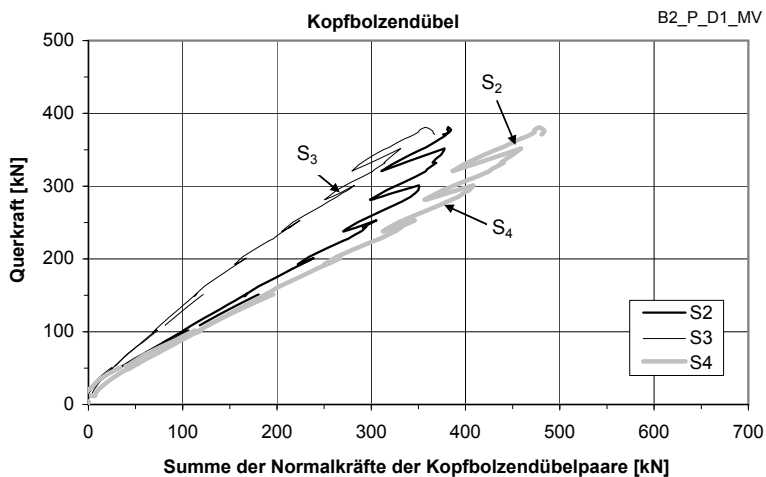
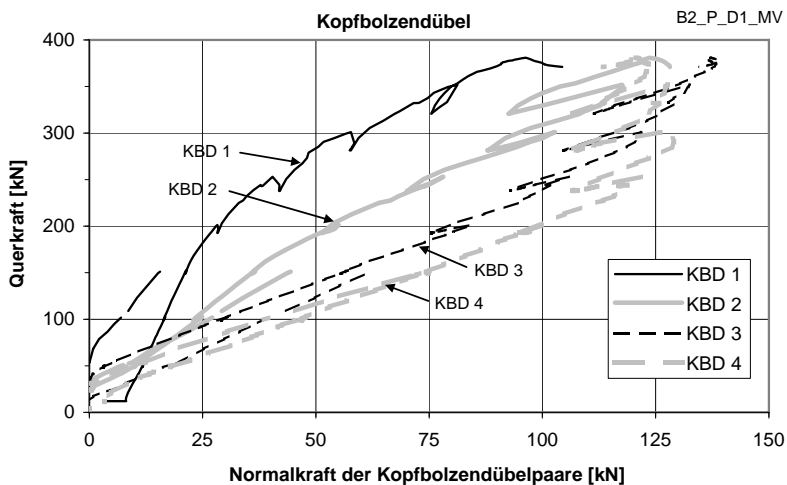
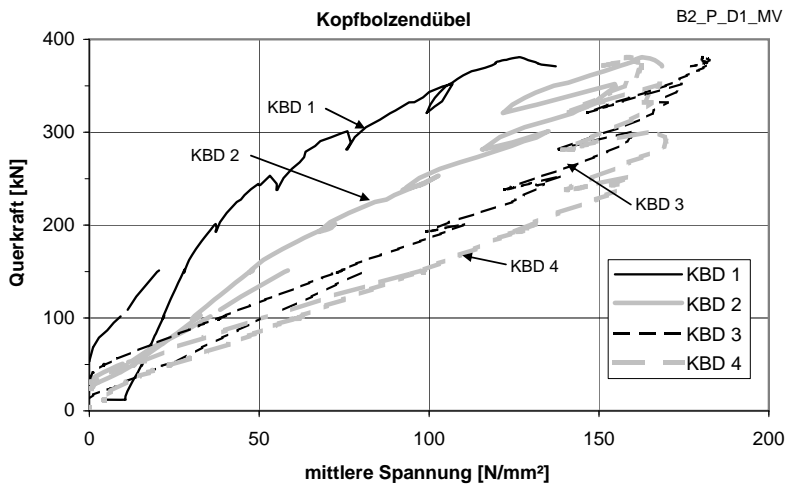




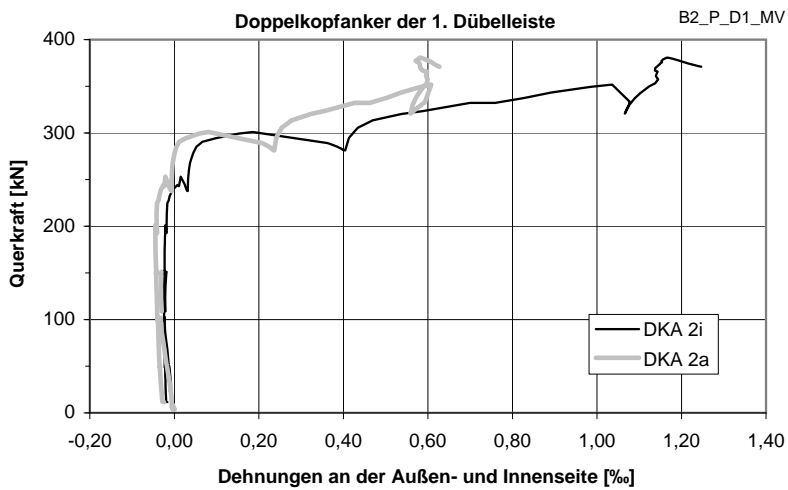
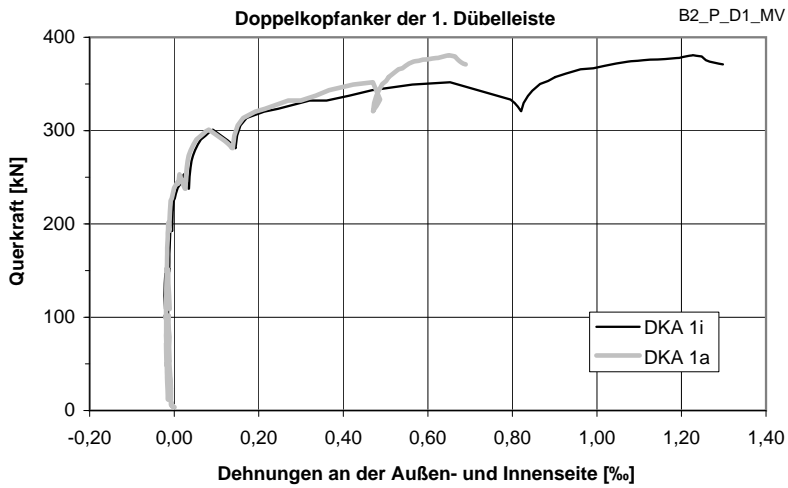
B.21.3. Kopfbolzendübel

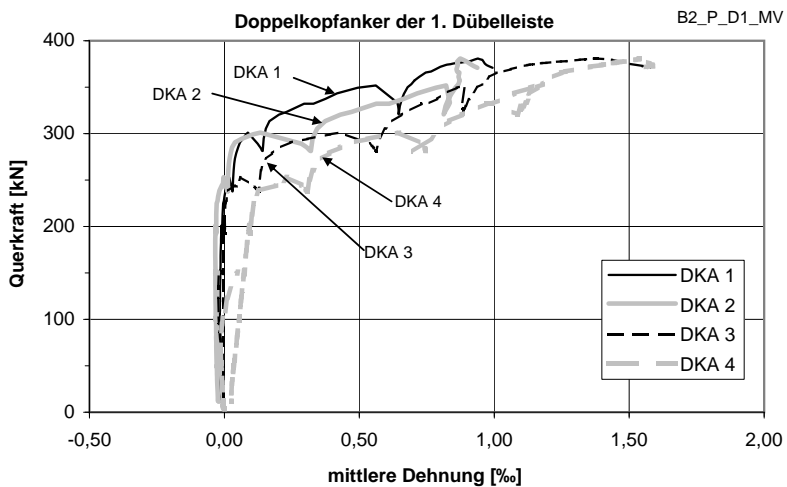
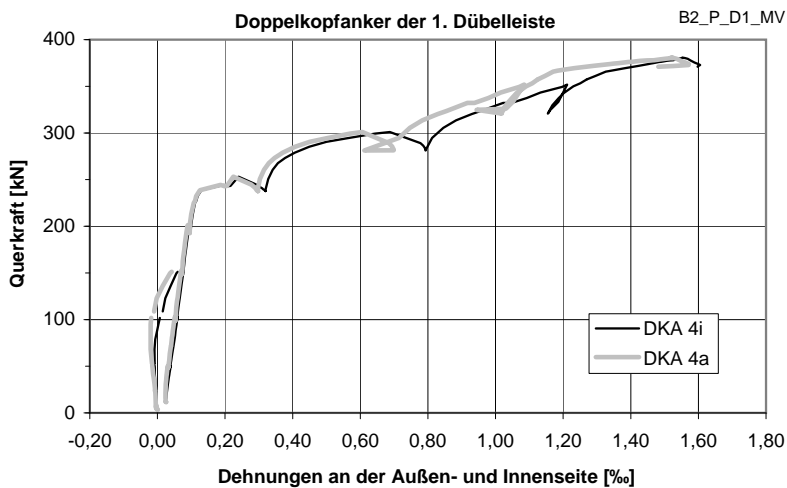
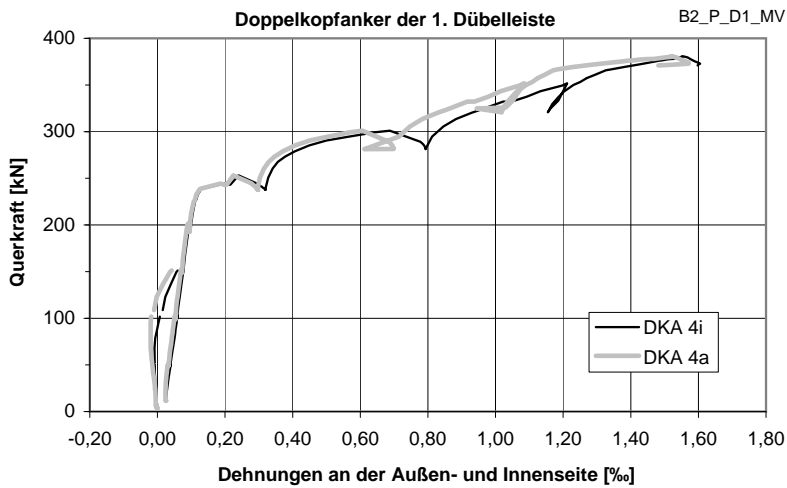


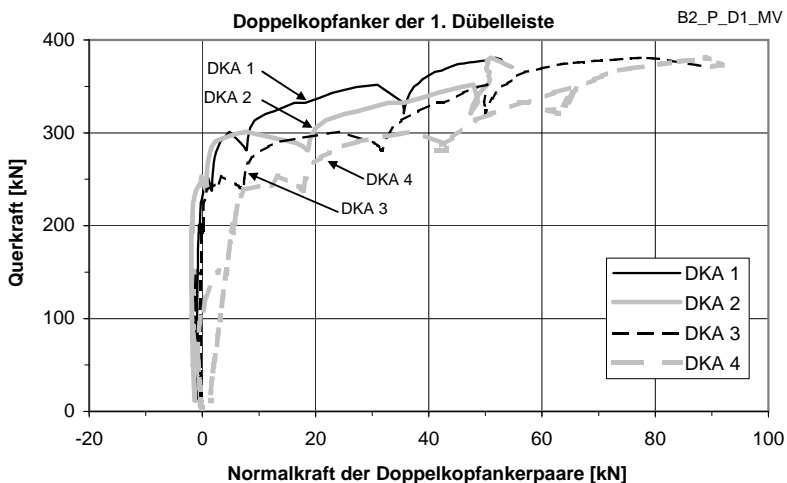
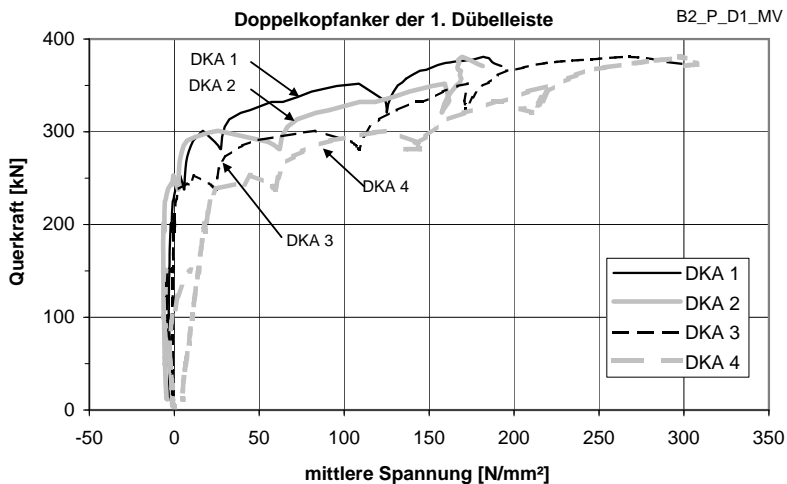




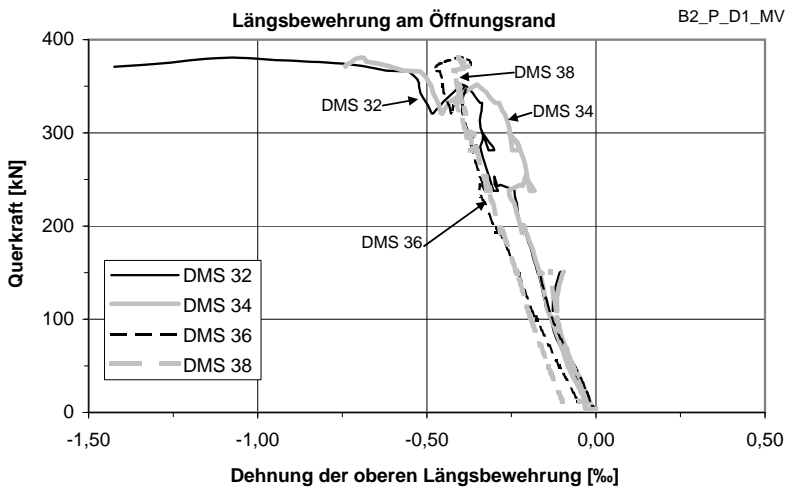
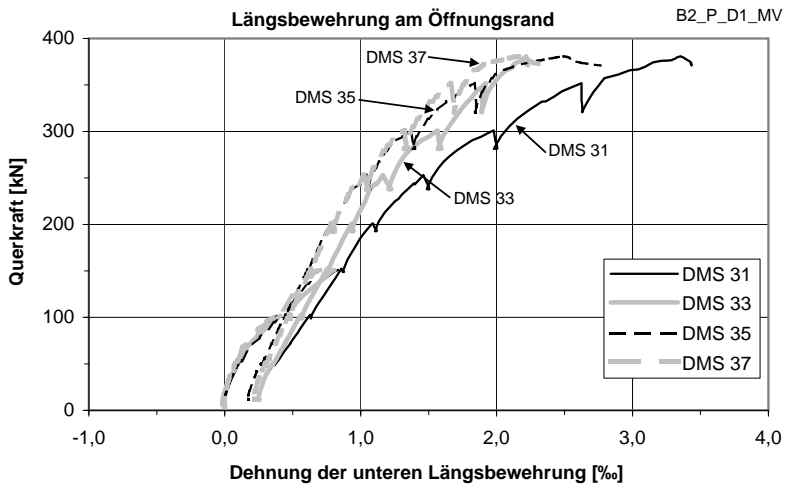
B.21.4. Doppelkopfkanker

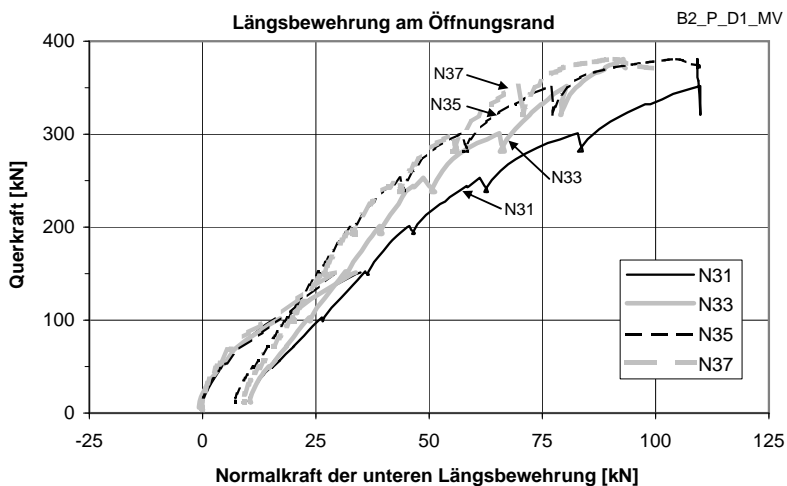
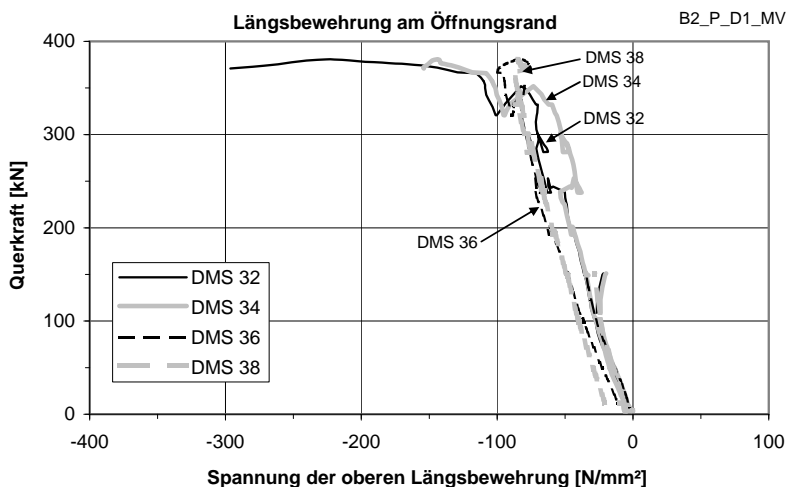
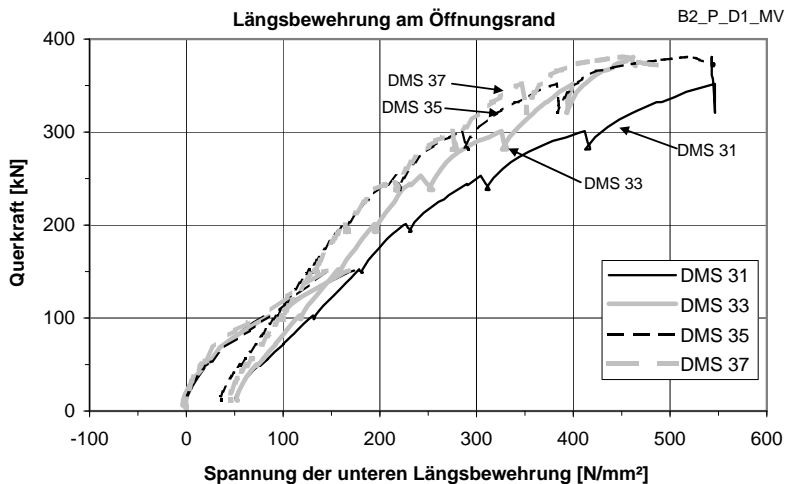


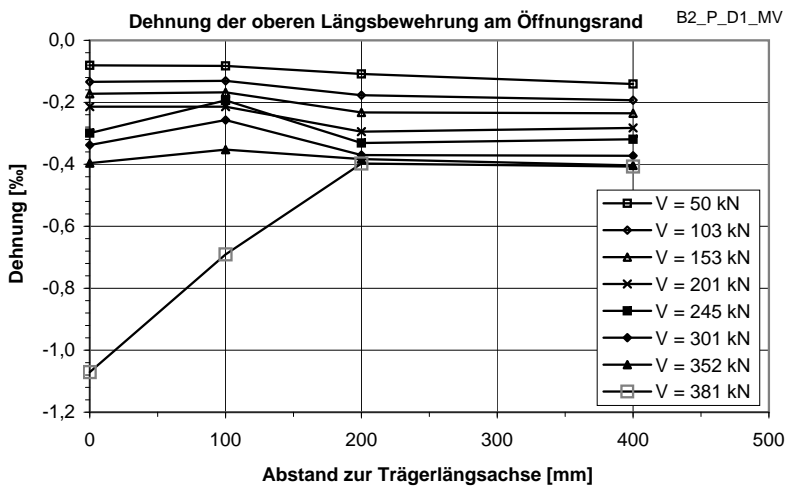
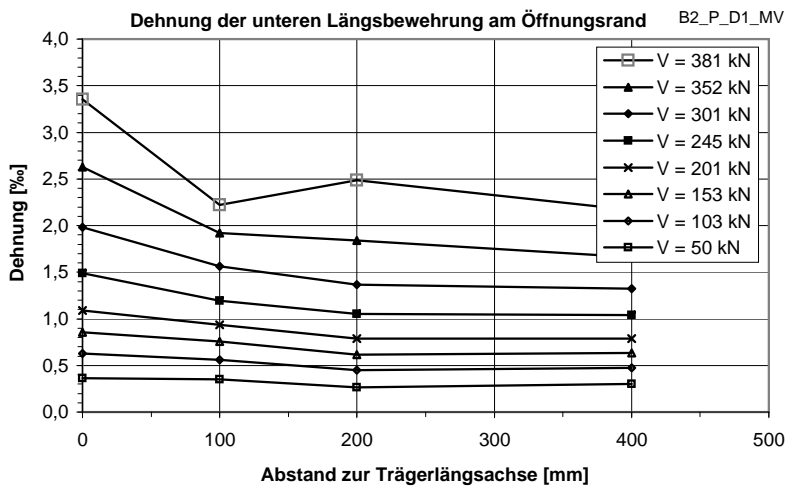
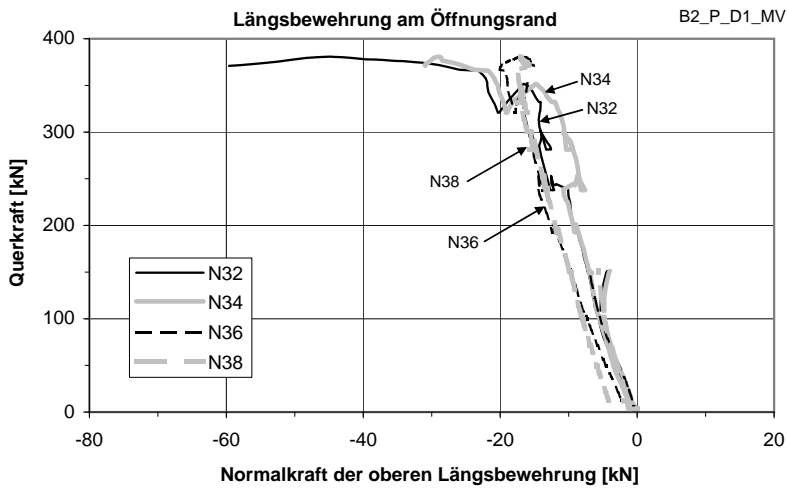


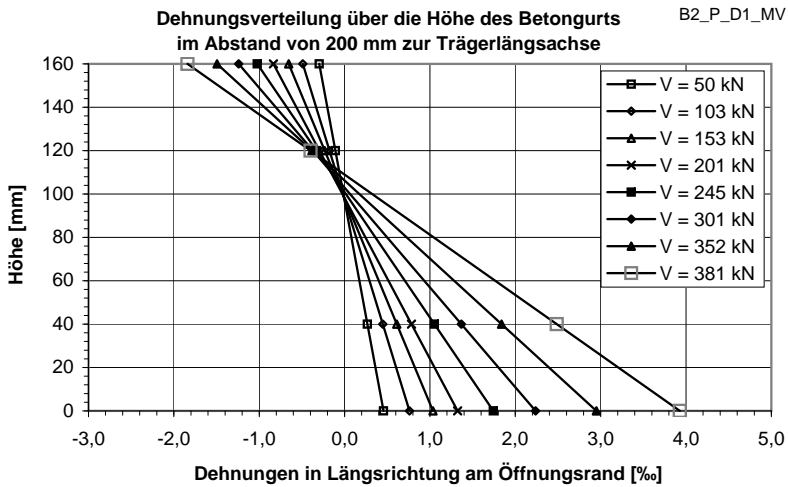
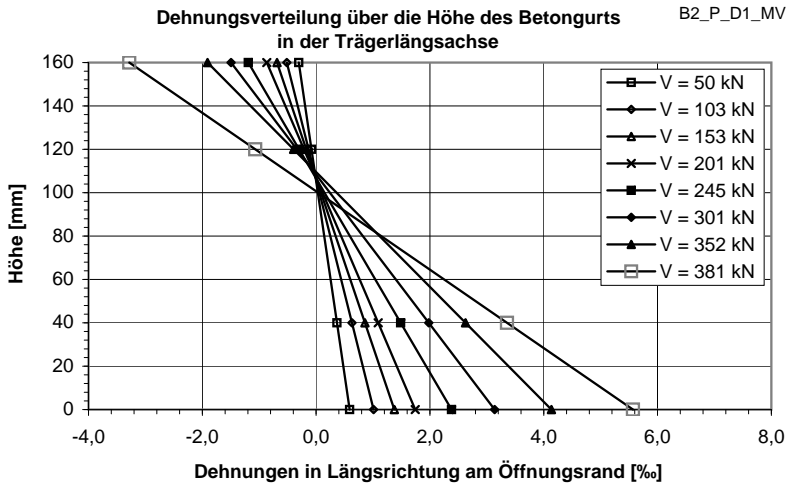


B.21.5. Längsbewehrung

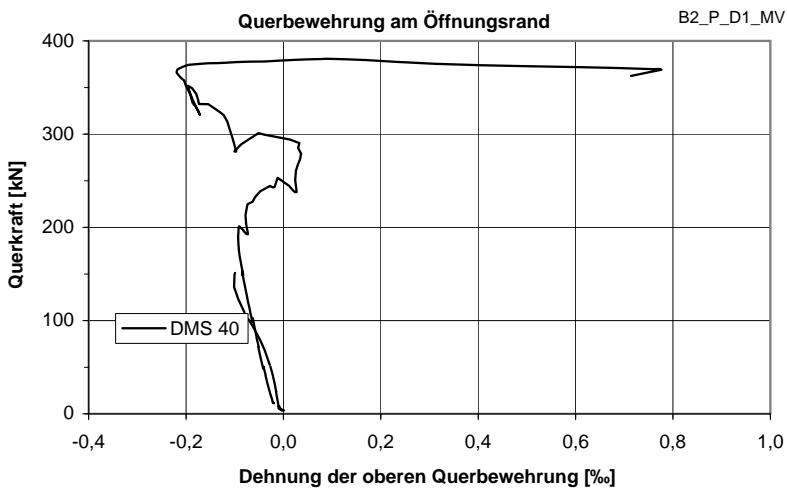
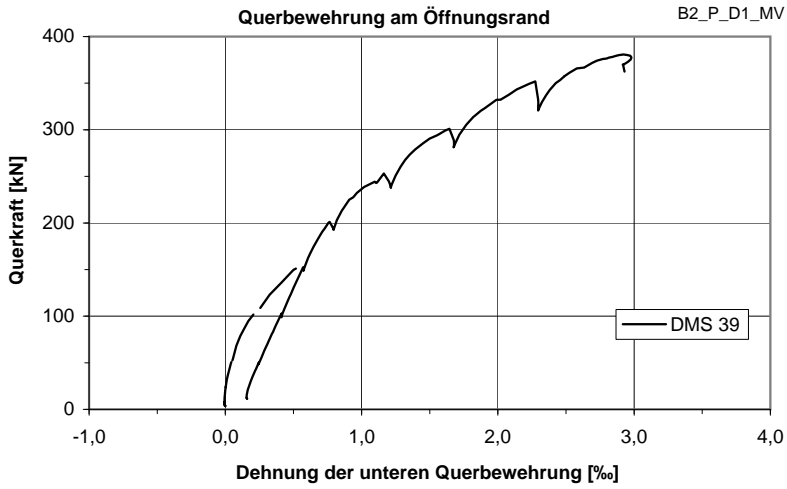


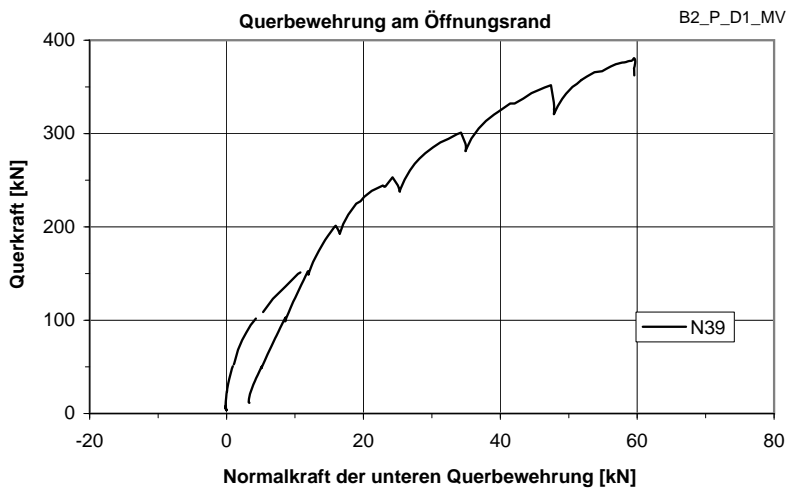
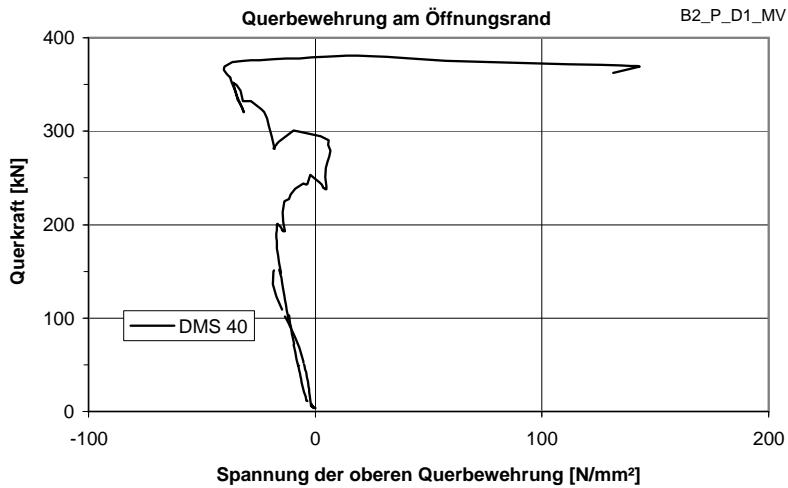
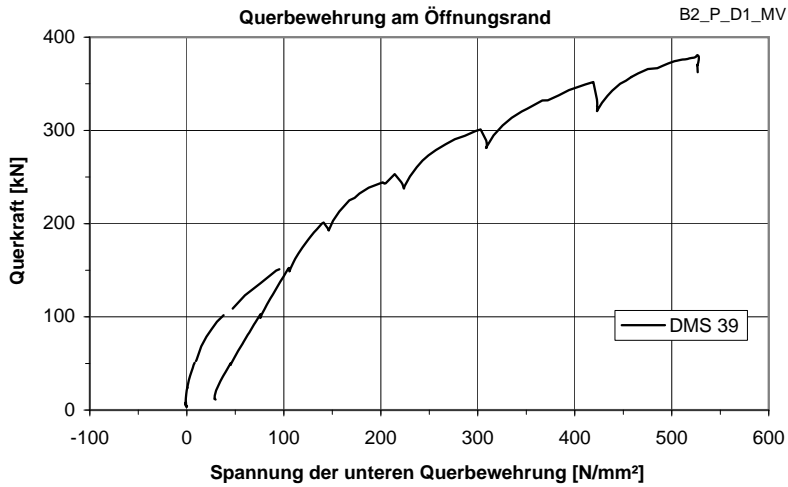


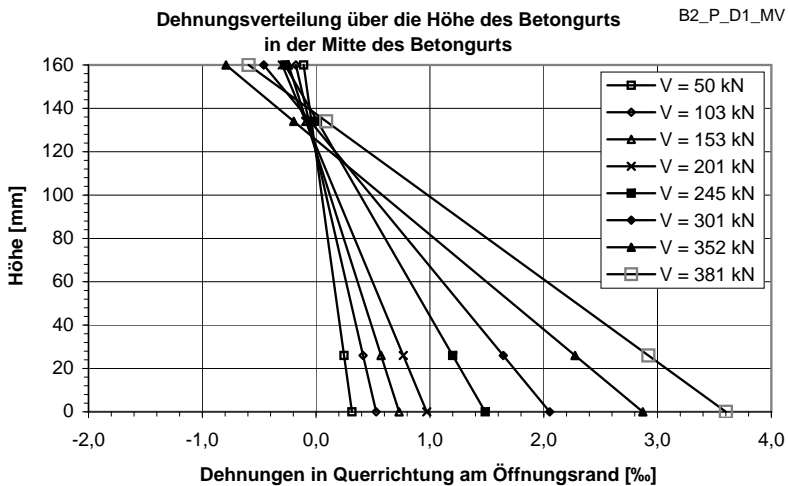
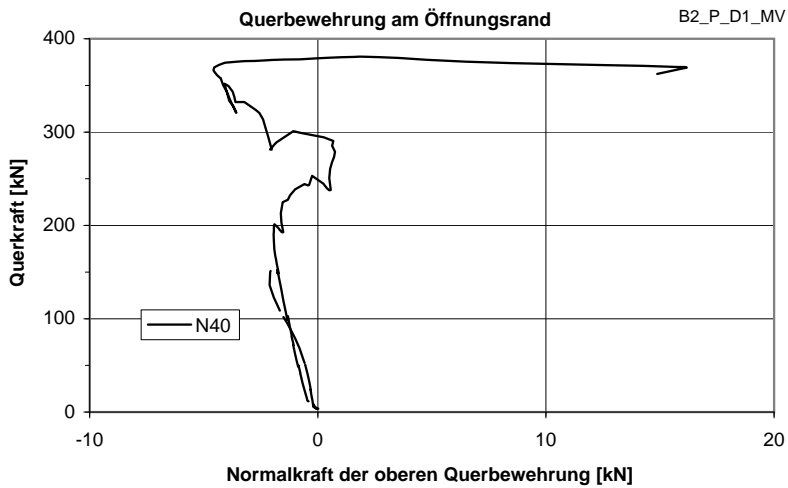




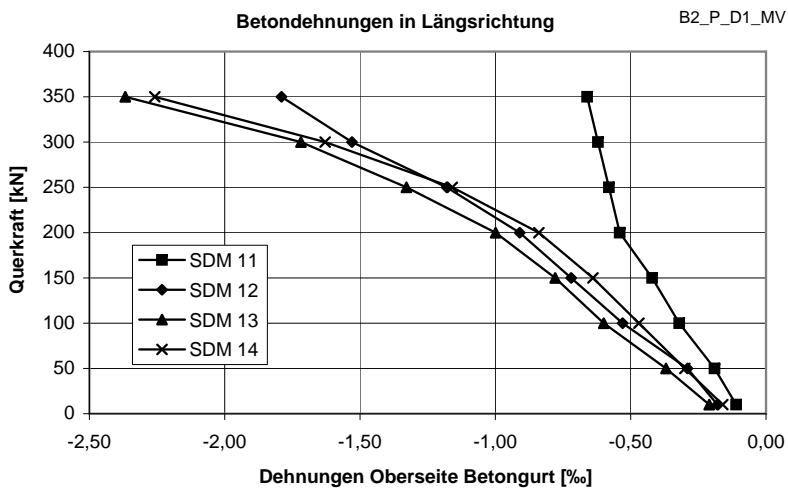
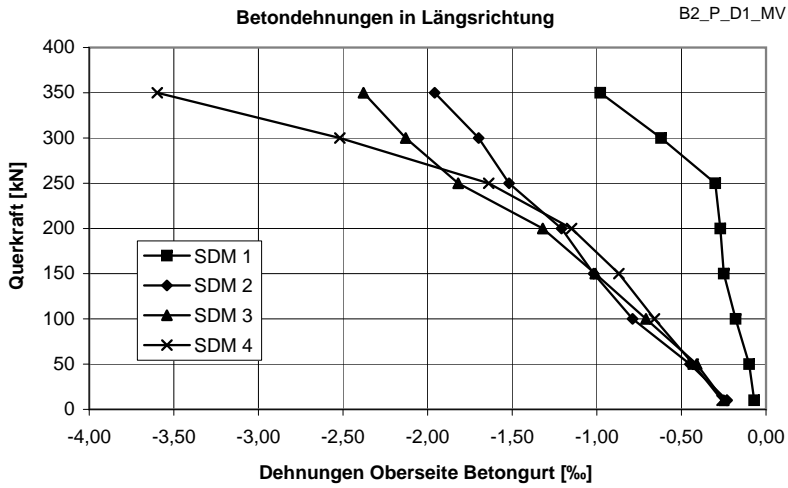
B.21.6. Querbewehrung

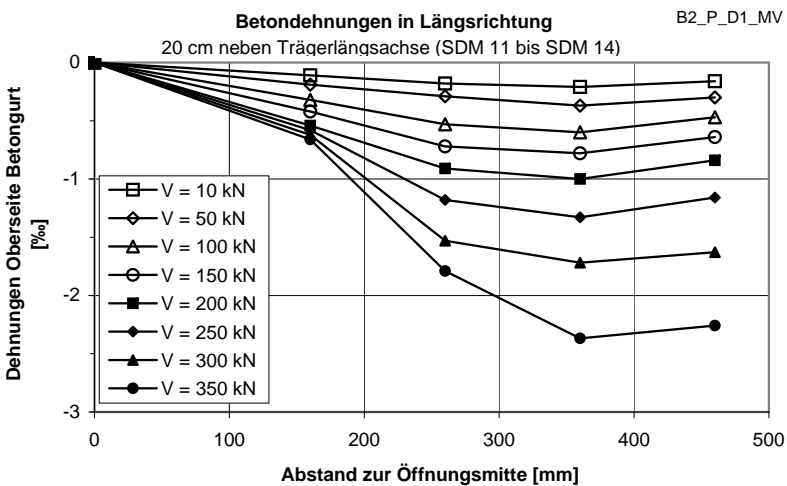
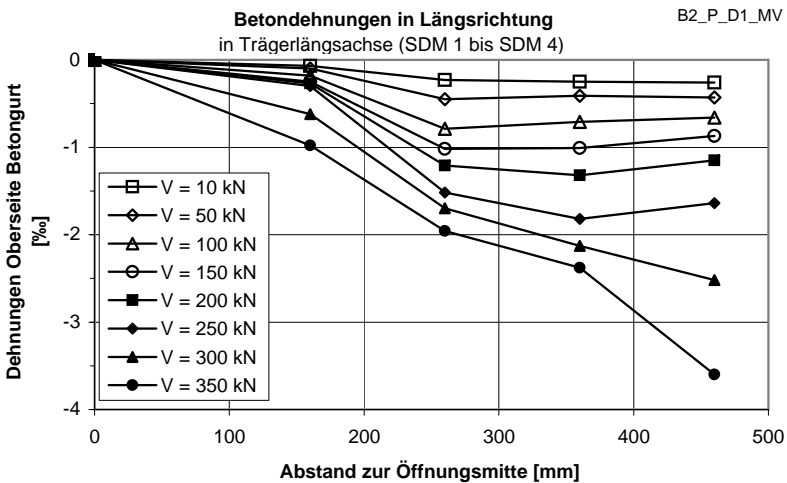
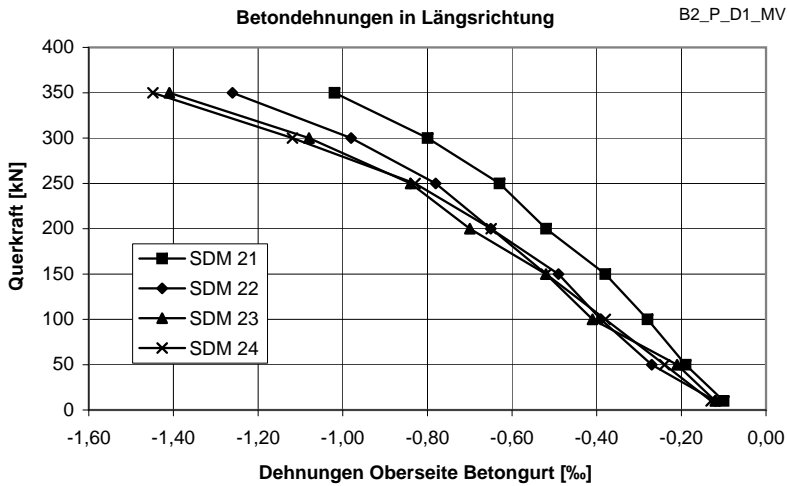


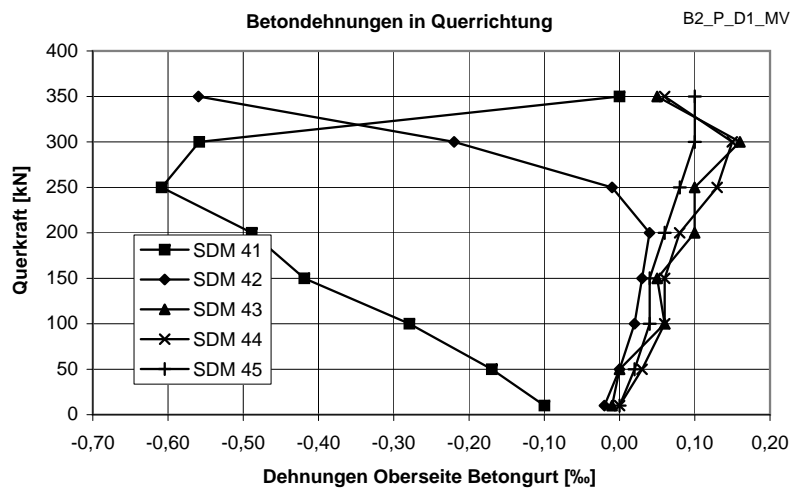
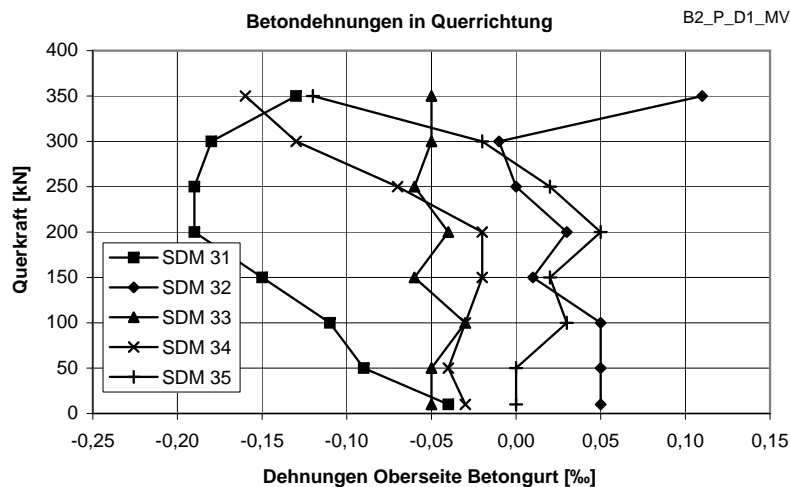
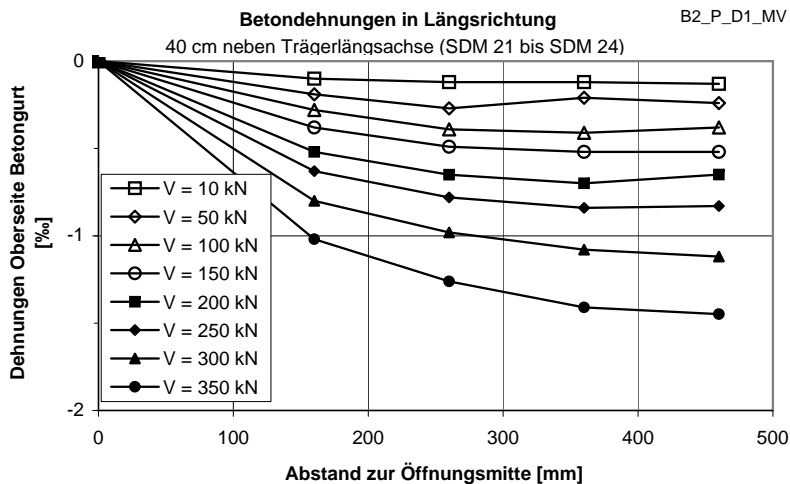


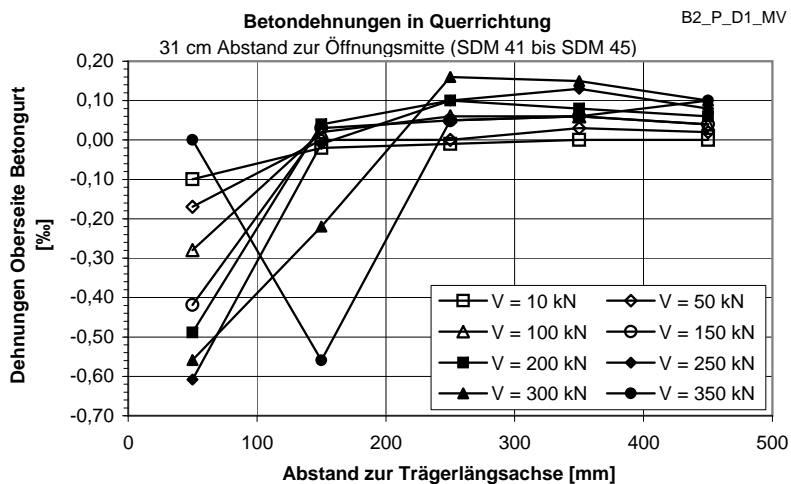
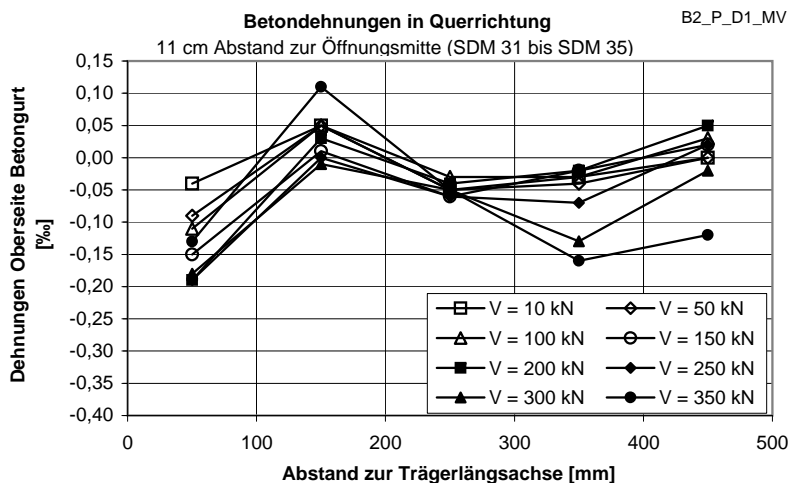
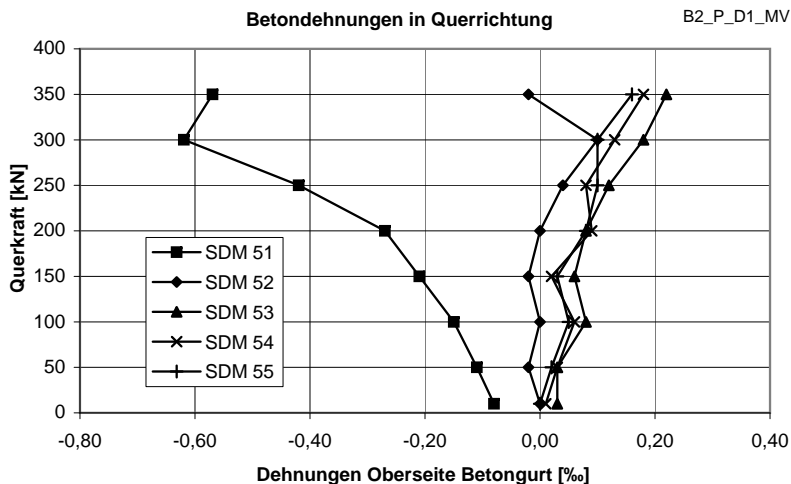


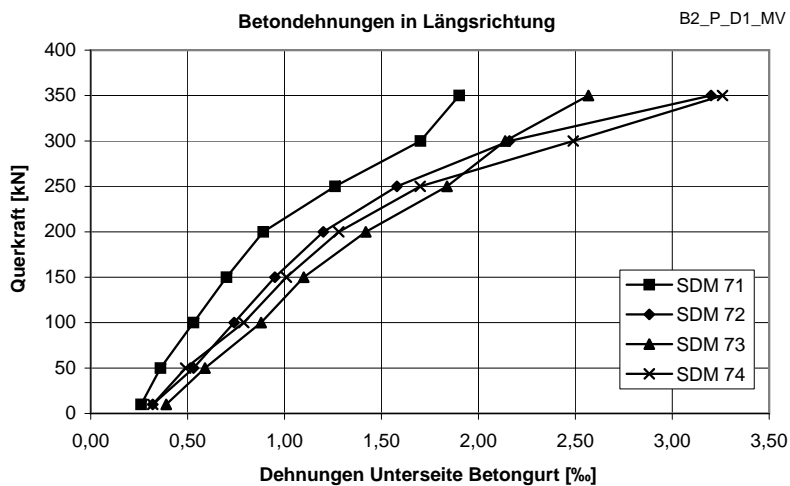
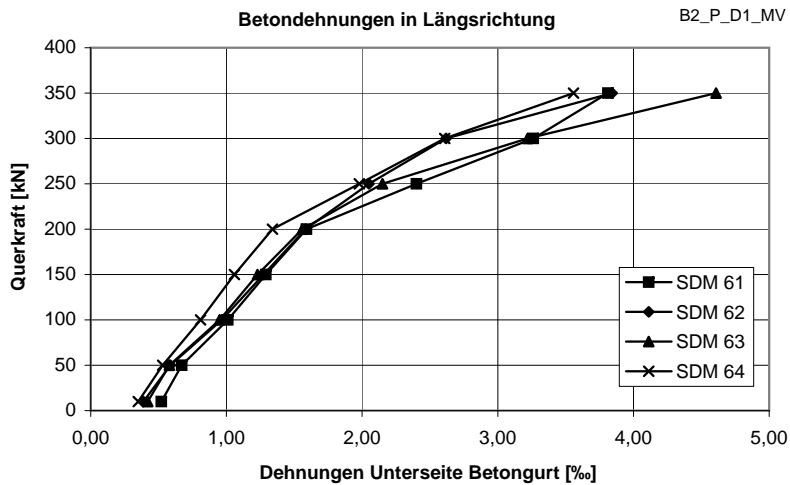
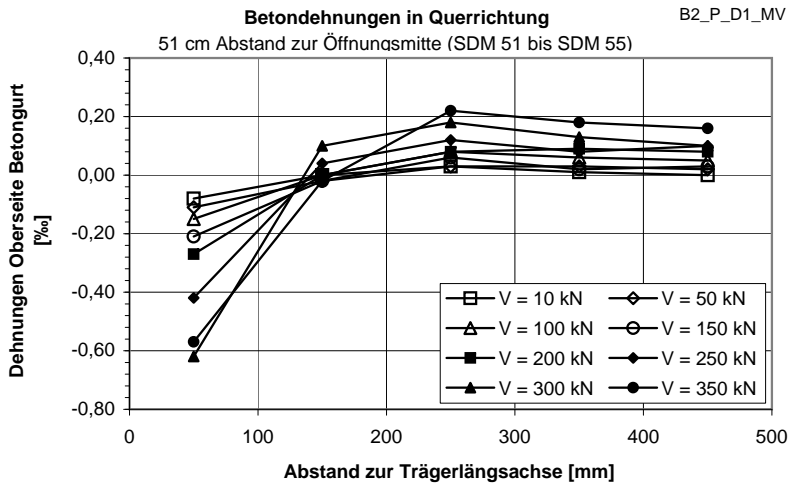
B.21.7. Betondehnungen

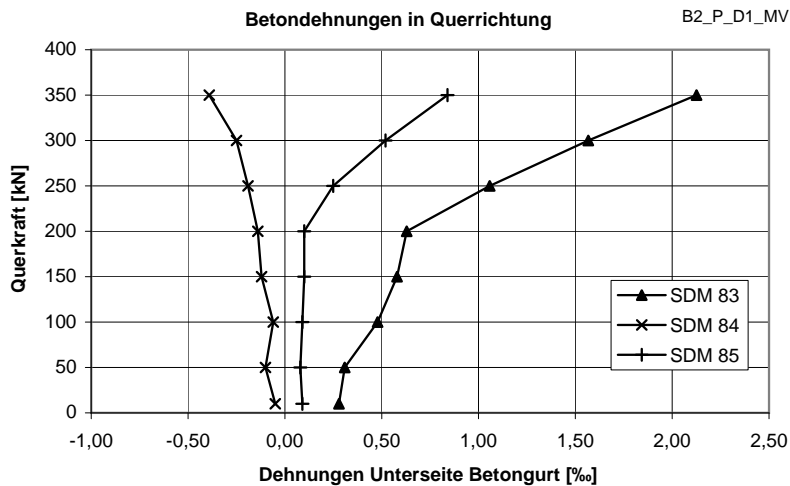
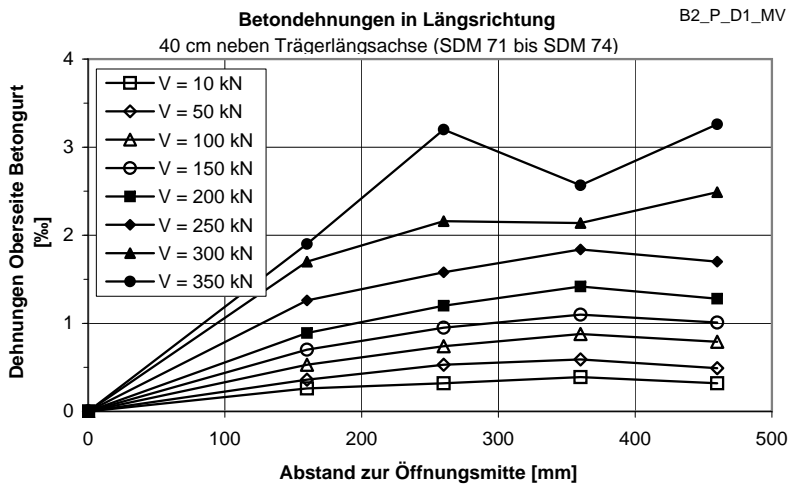
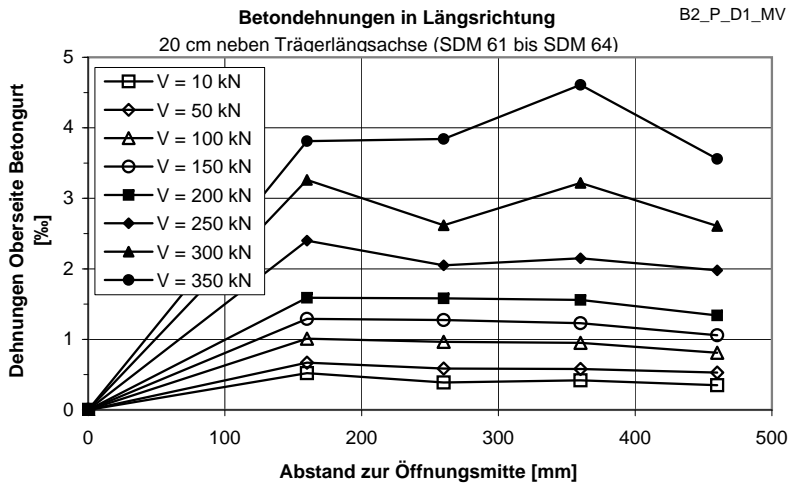


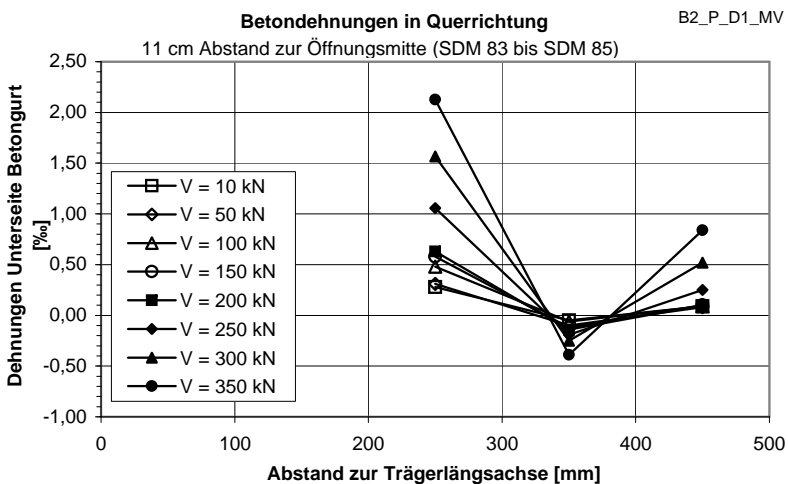
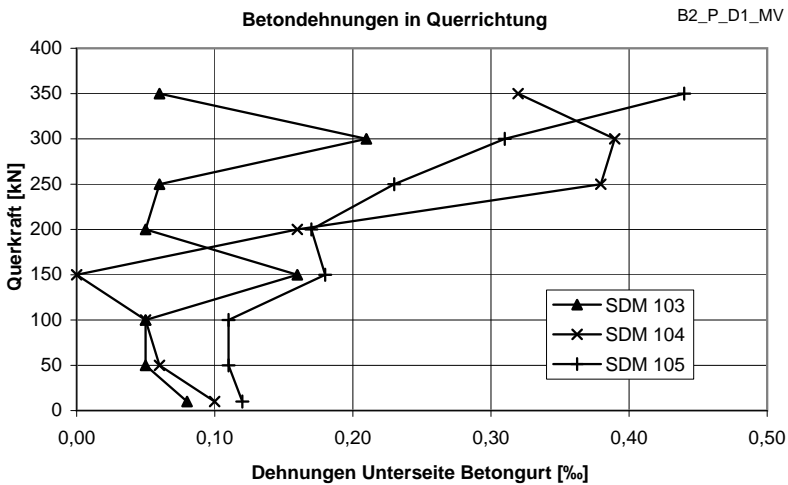
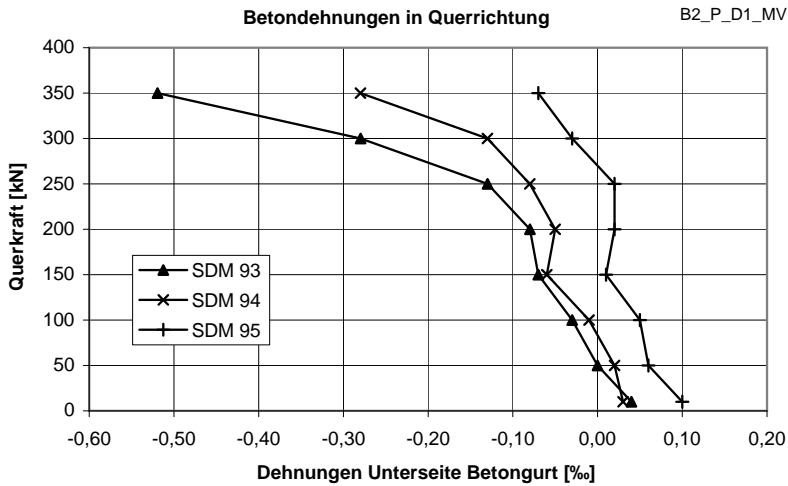


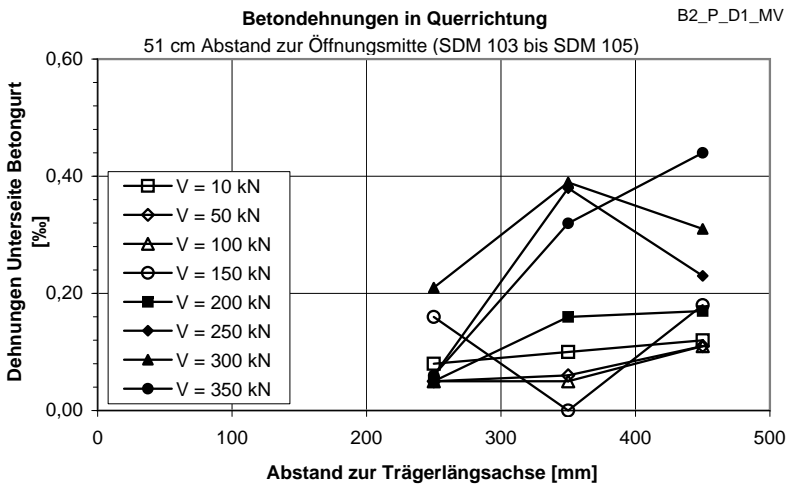
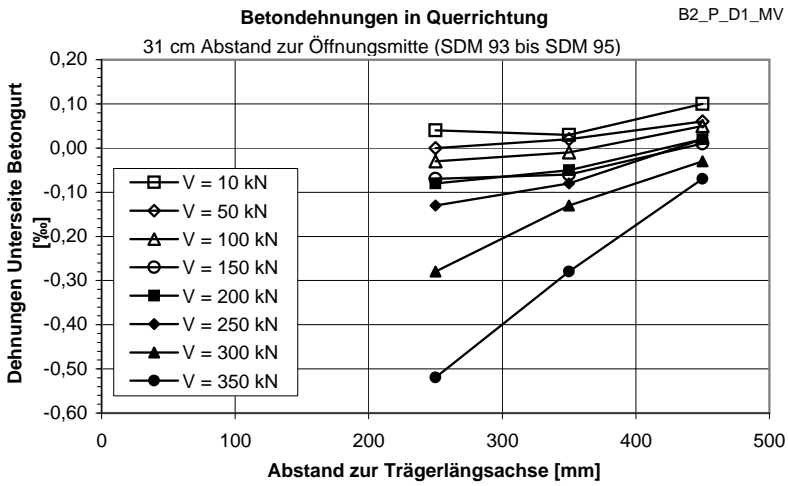






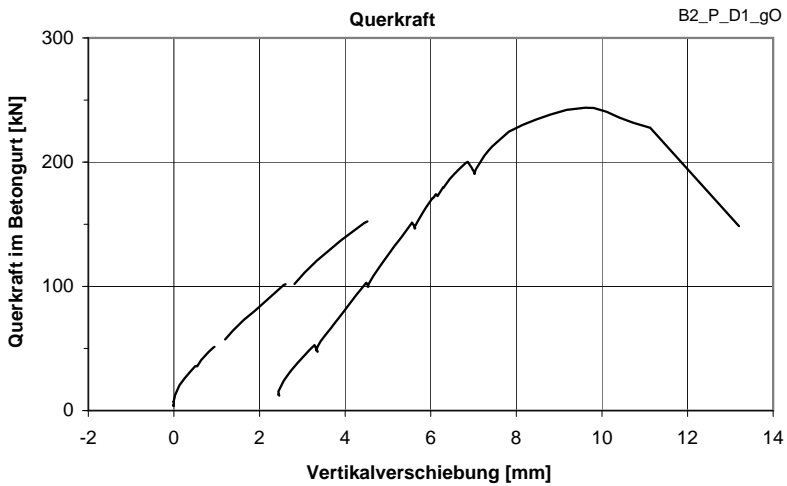
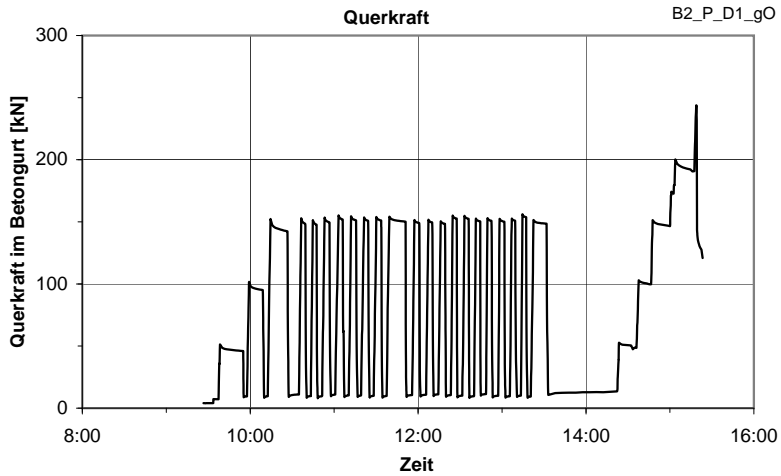


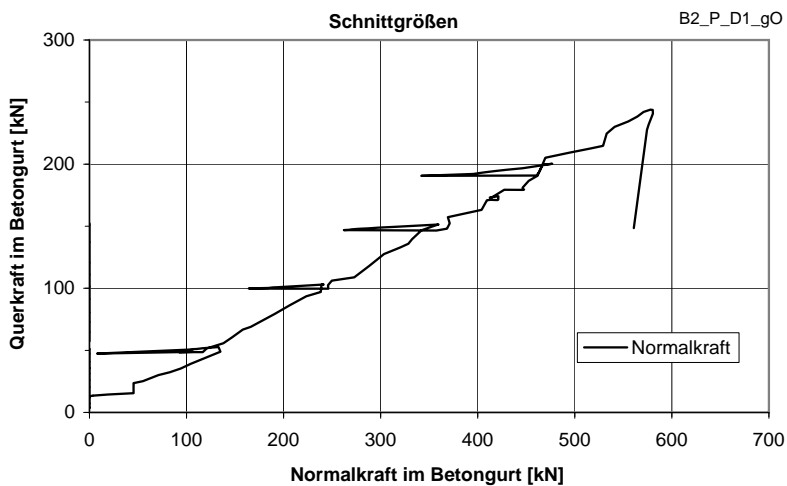
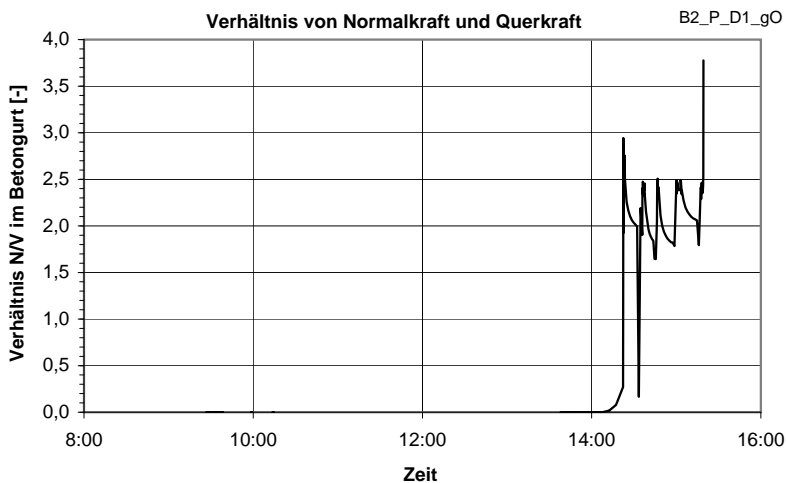
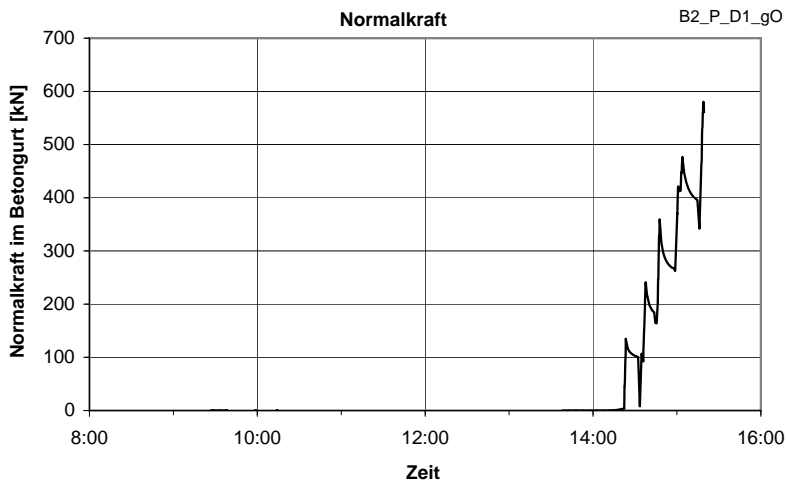


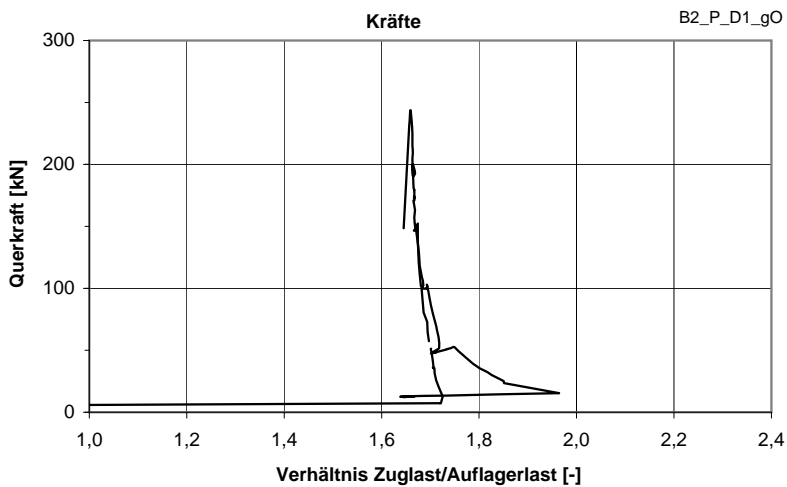
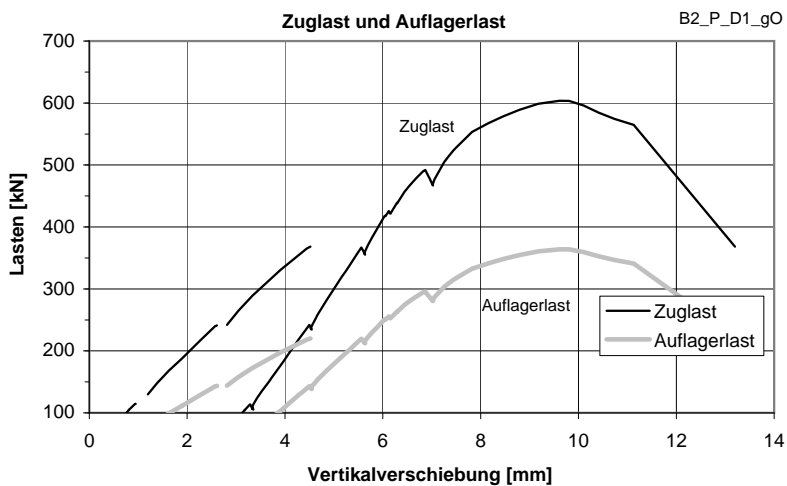


B.22. Versuch B2_P_D1_gO

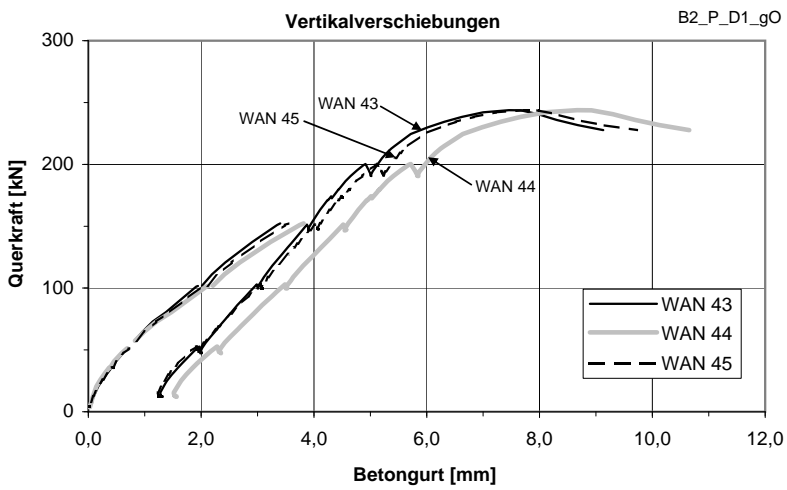
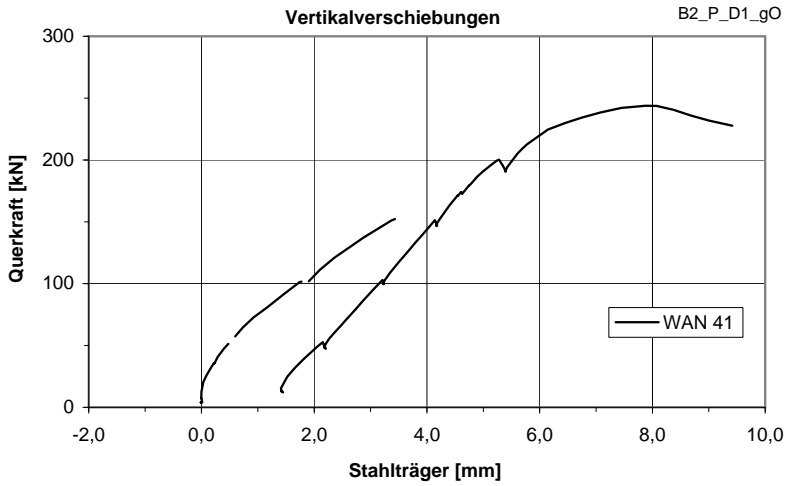
B.22.1. Kräfte

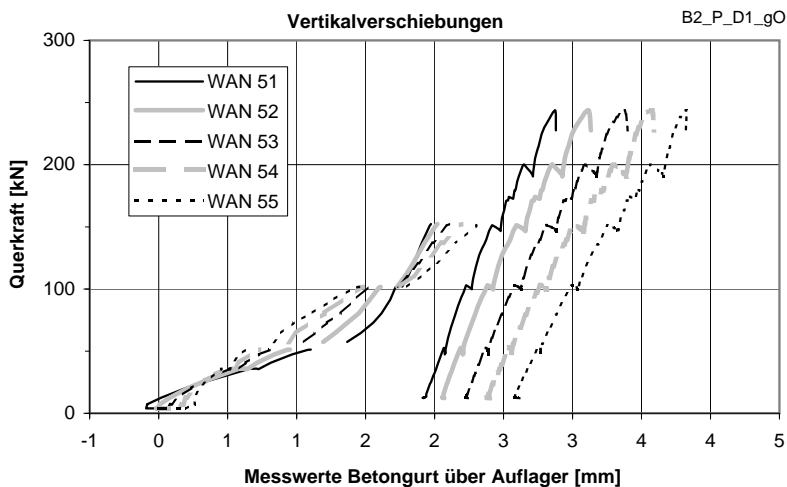
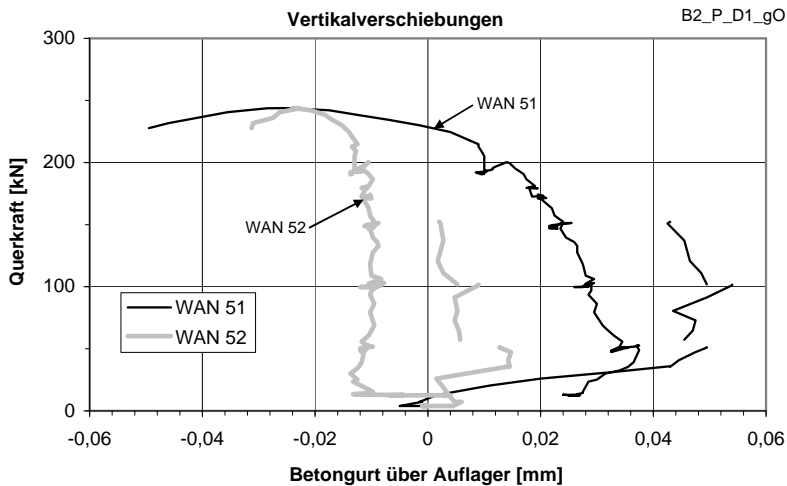
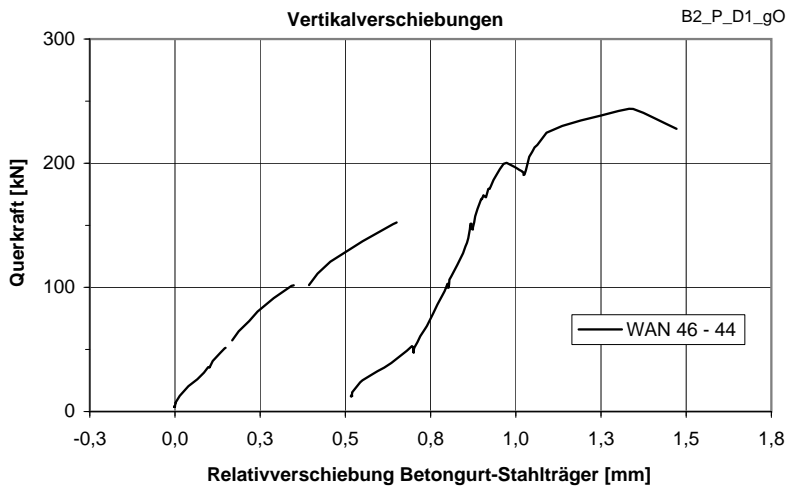




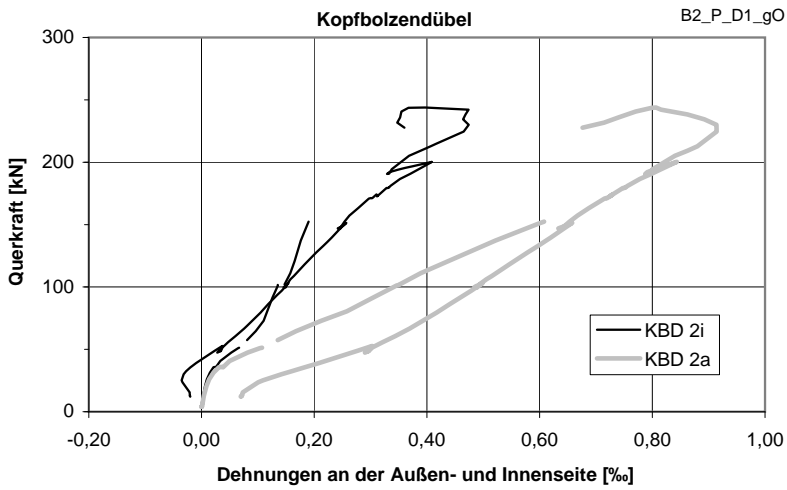
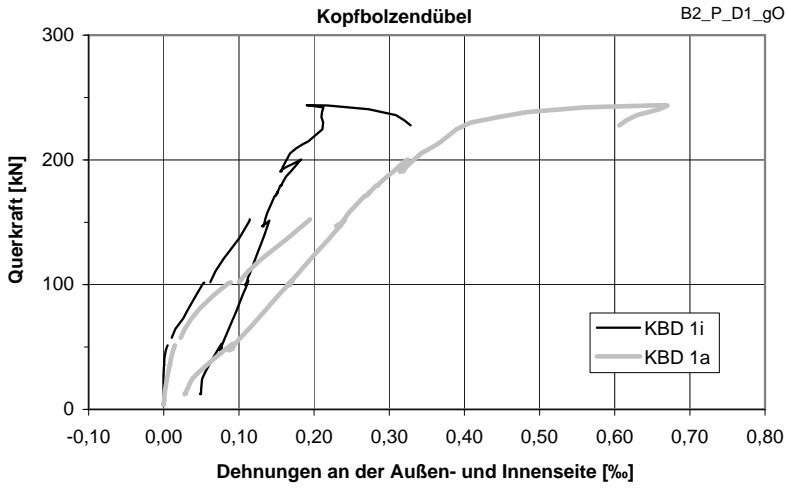


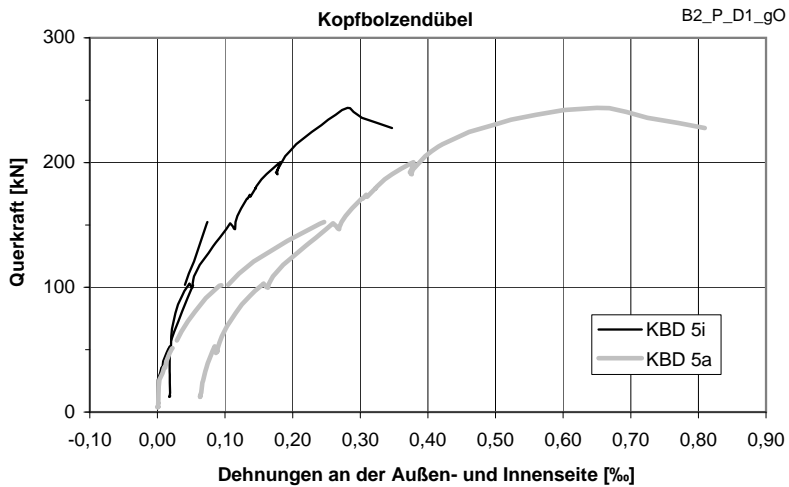
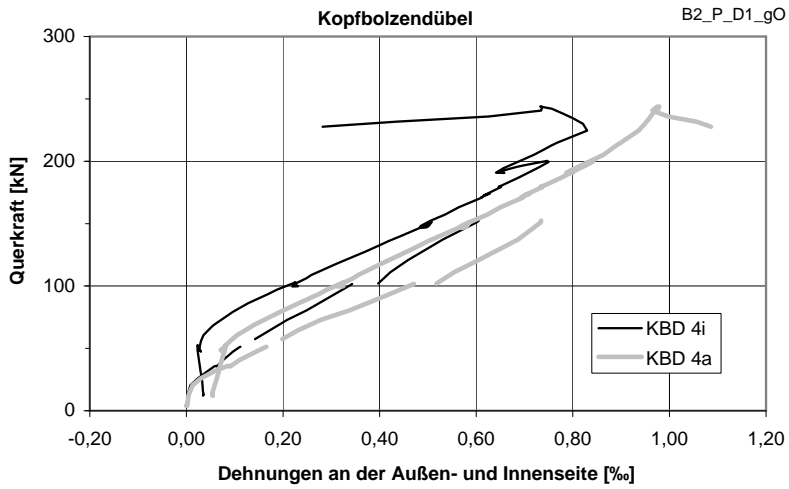
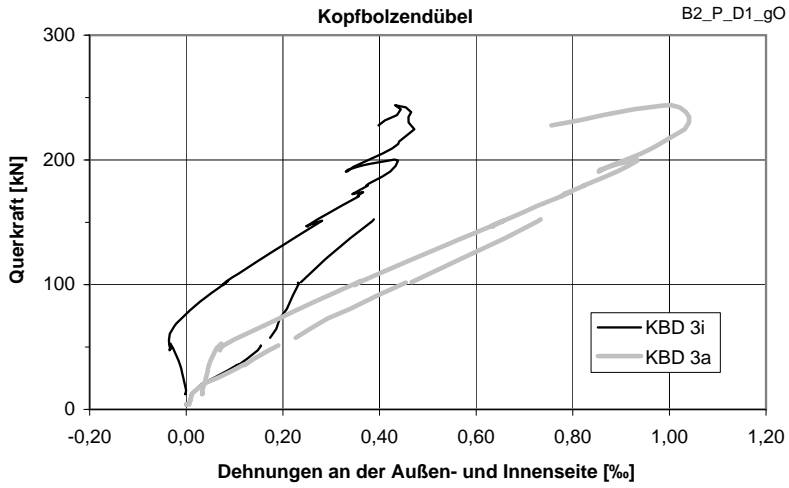
B.22.2. Verformungen

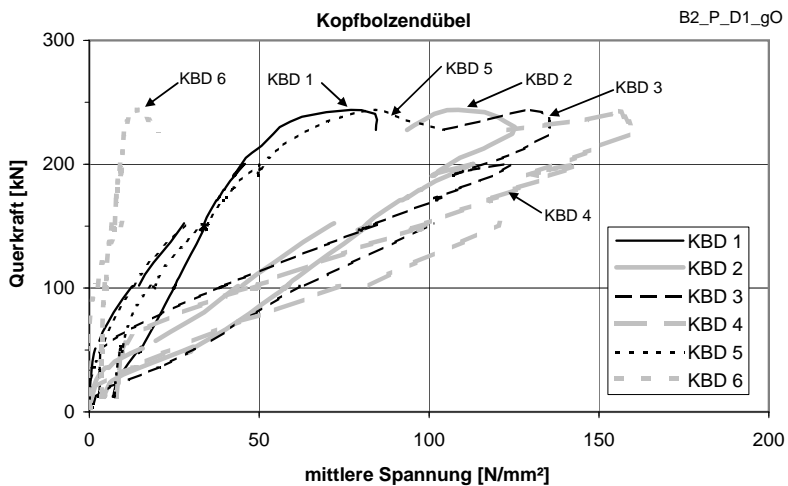
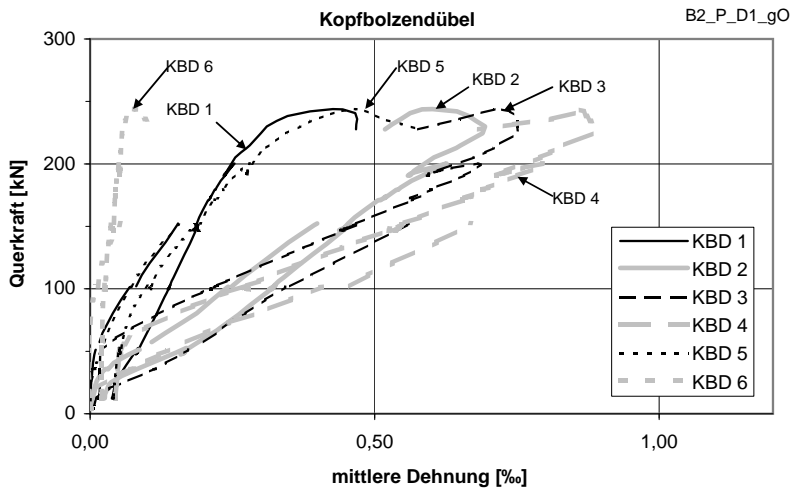
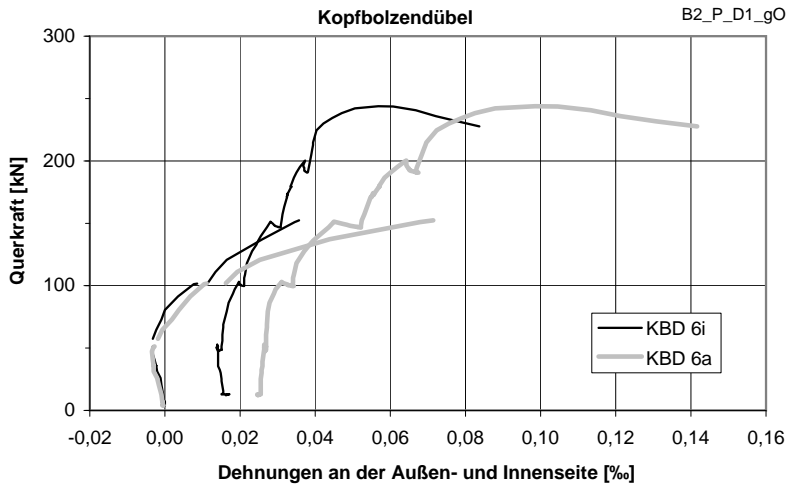


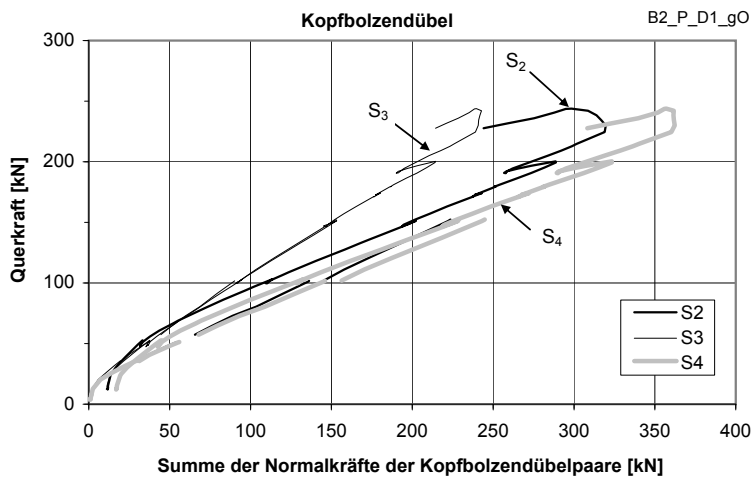
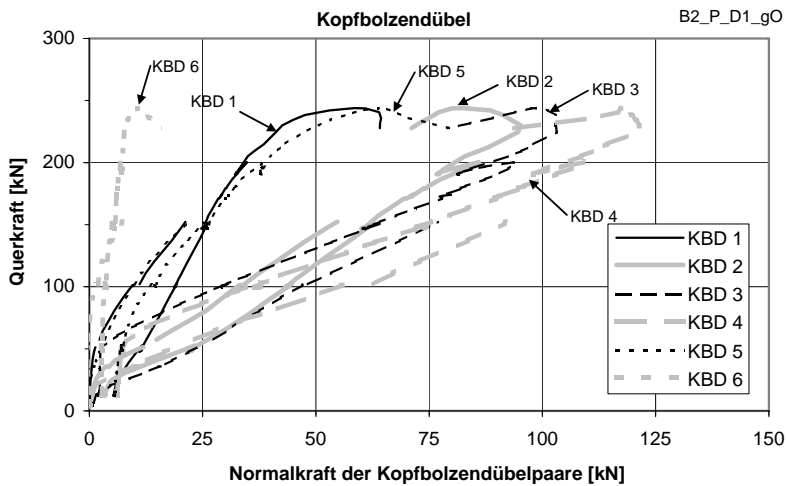


B.22.3. Kopfbolzendübel

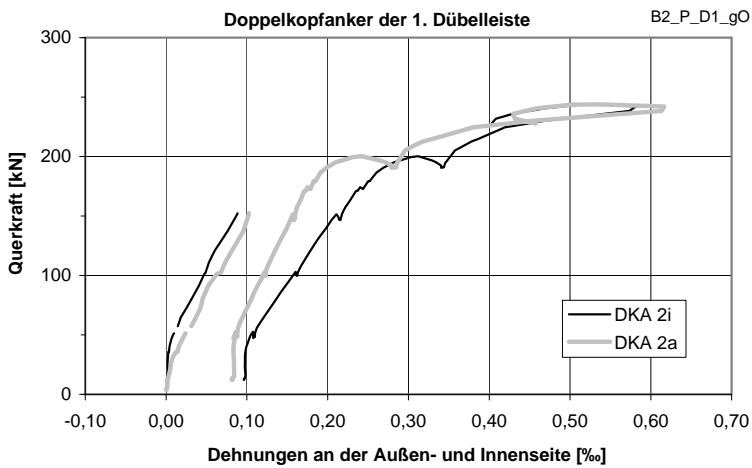
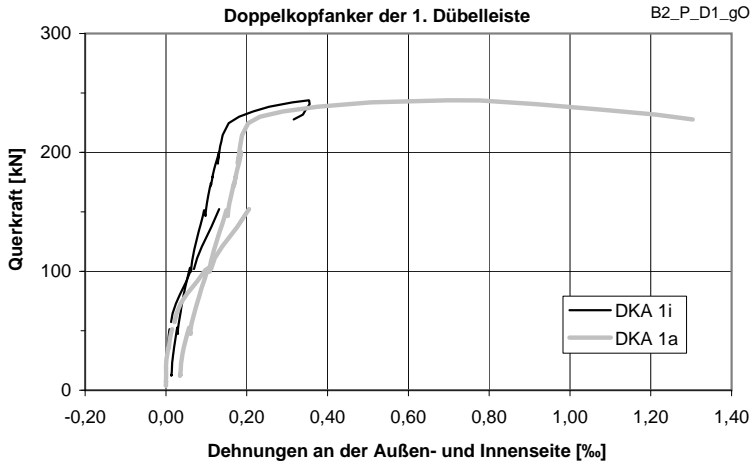


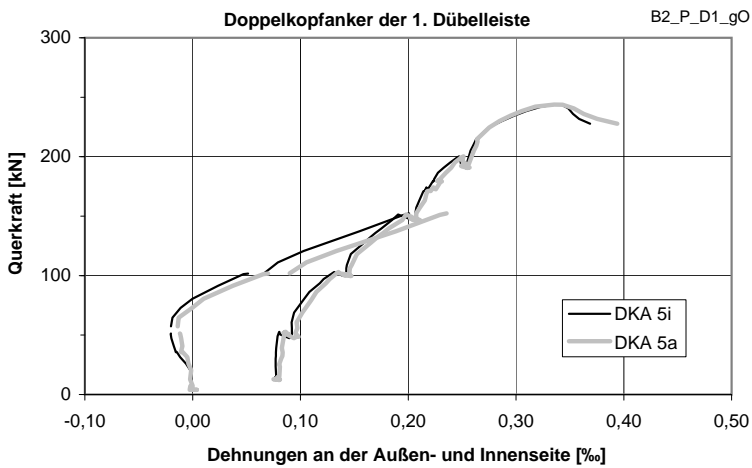
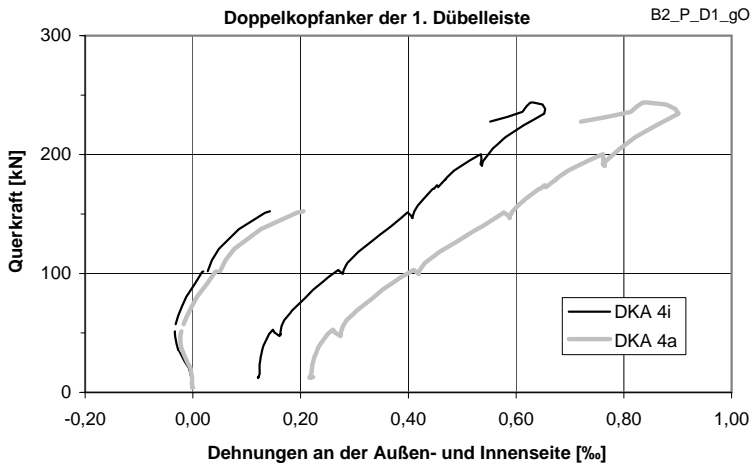
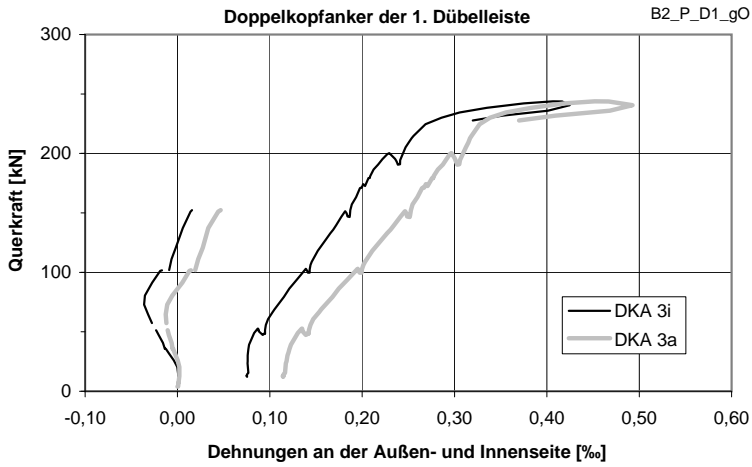


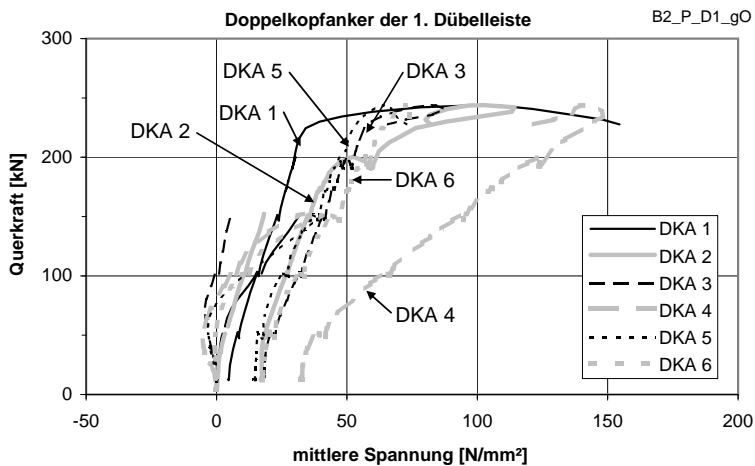
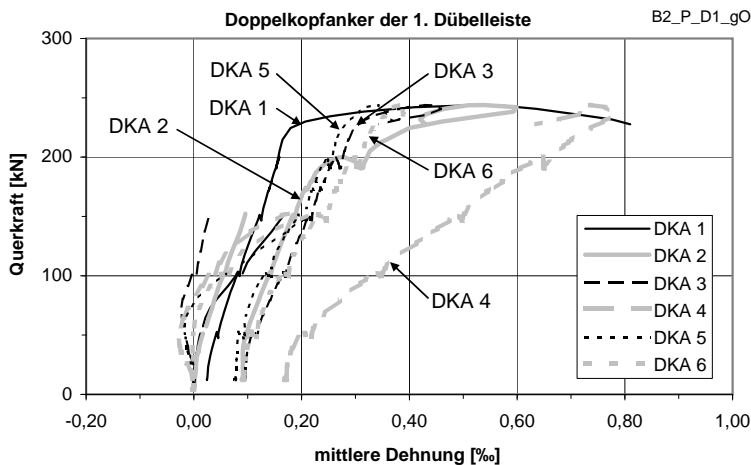
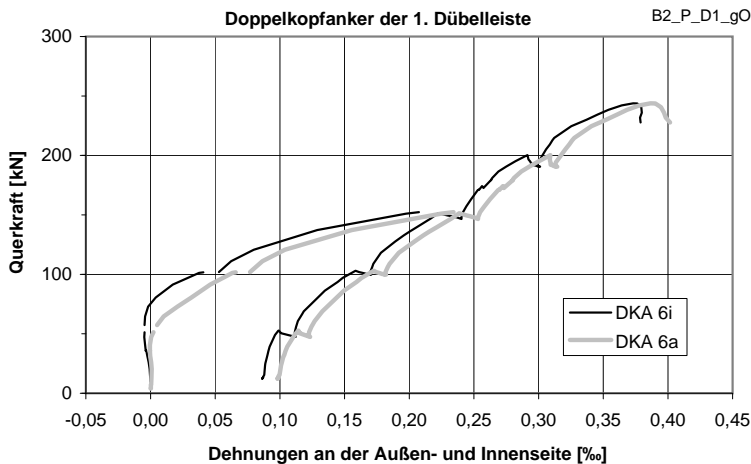


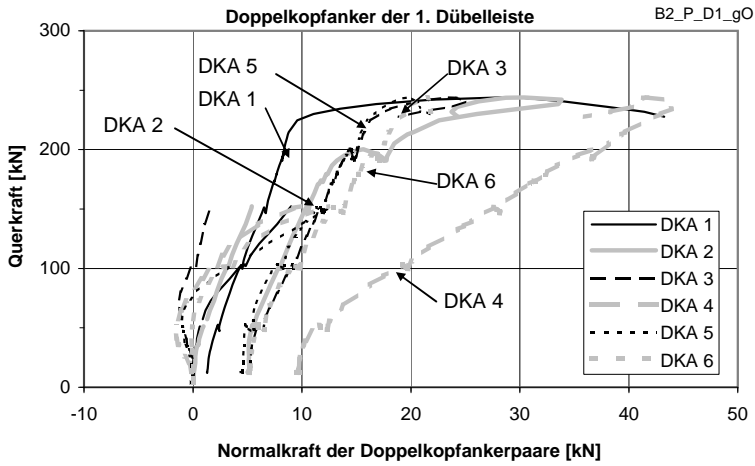


B.22.4. Doppelkopfanker

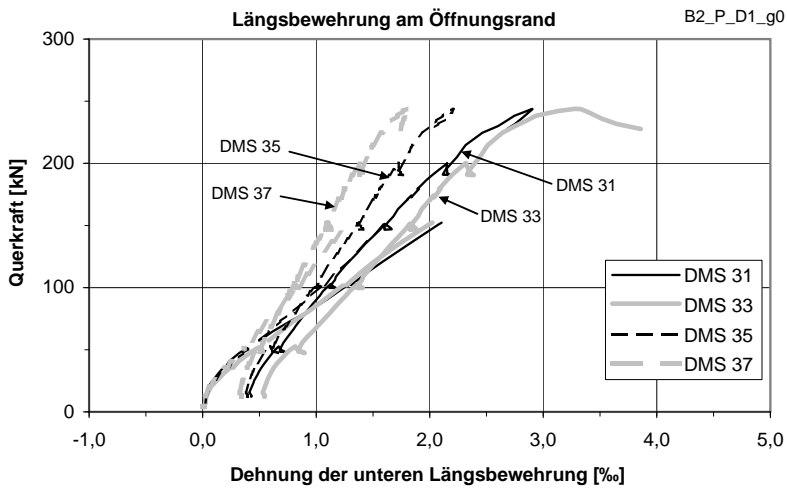


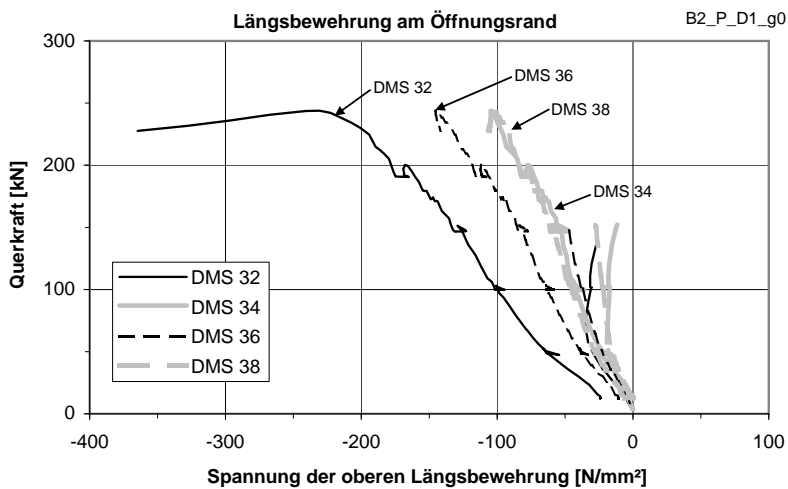
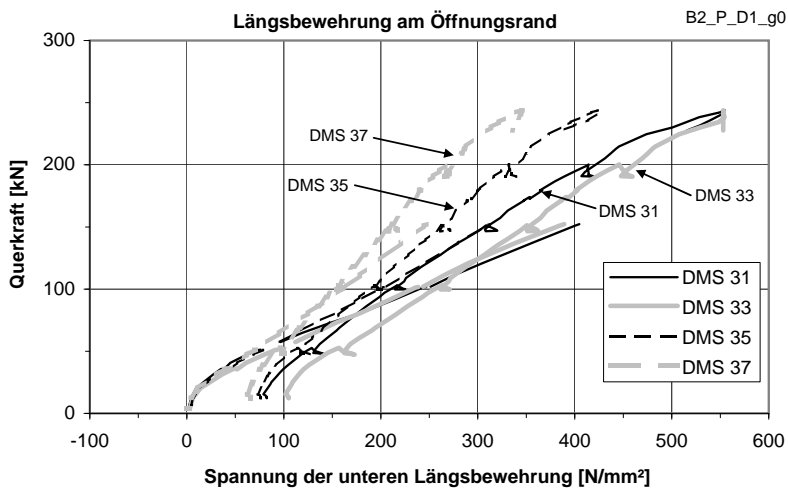
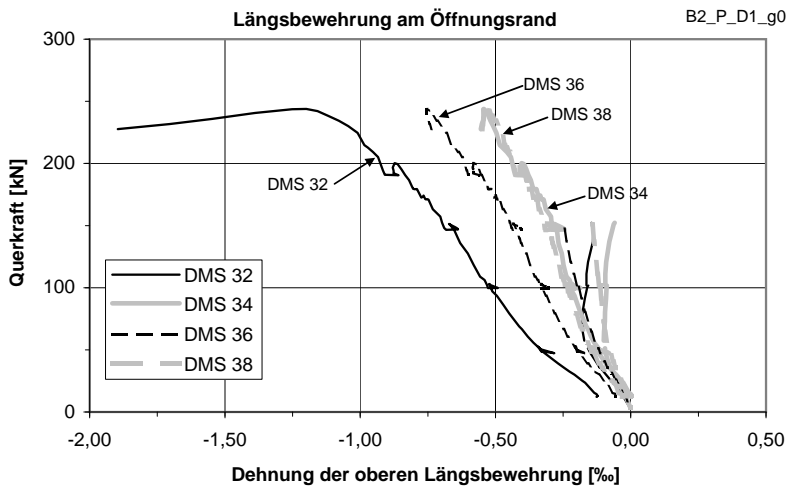


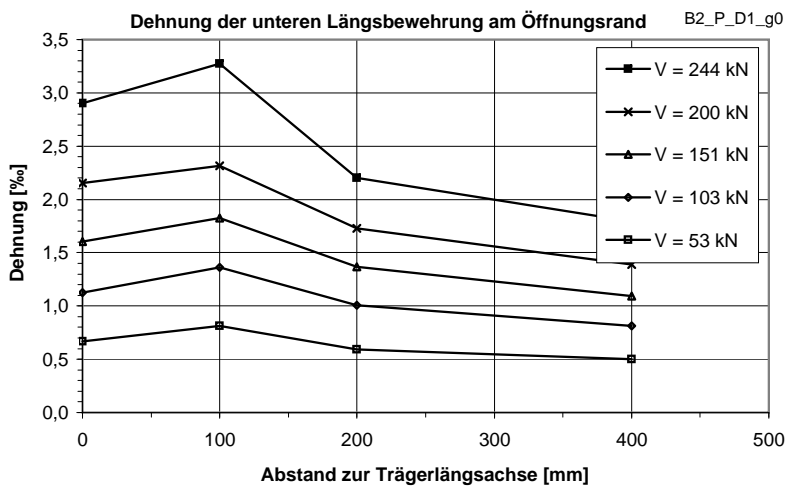
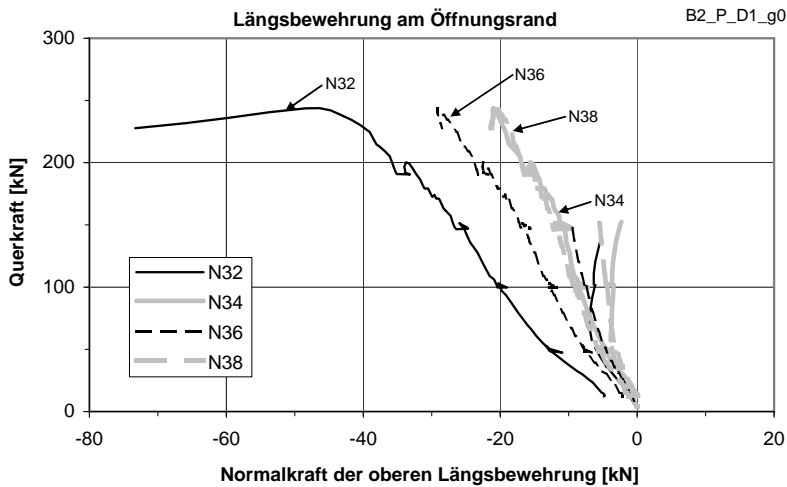
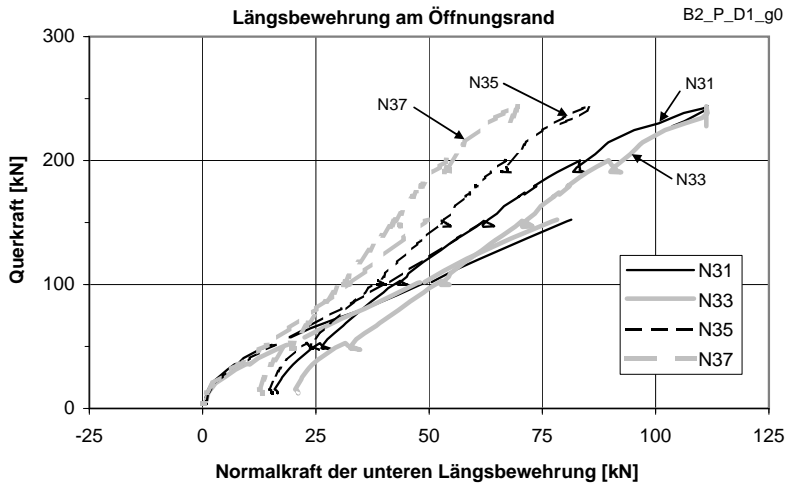


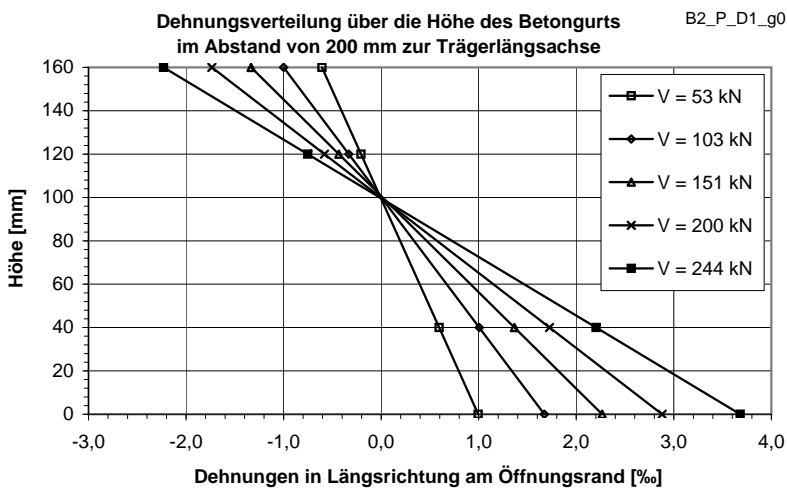
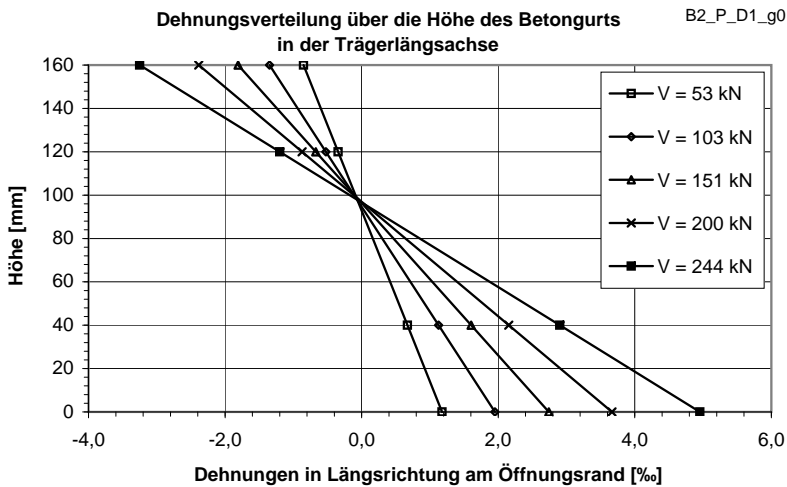
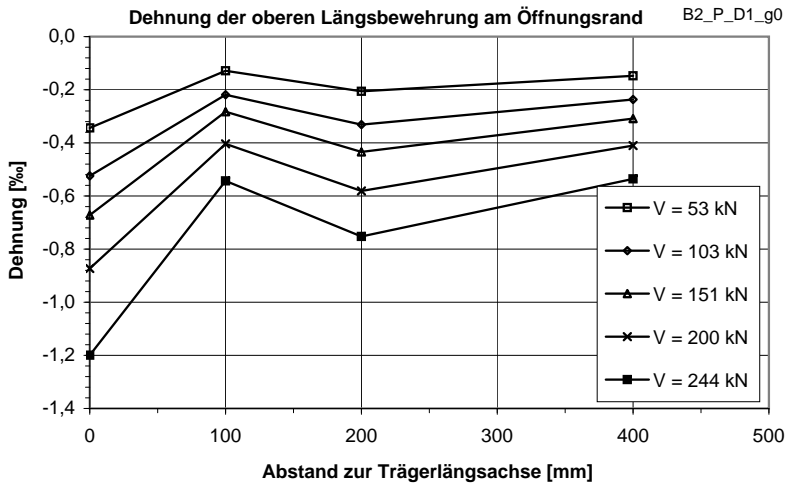


B.22.5. Längsbewehrung

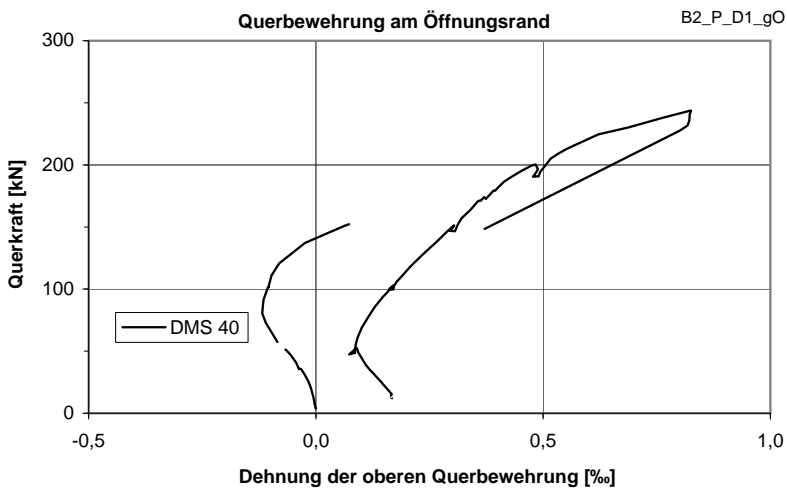
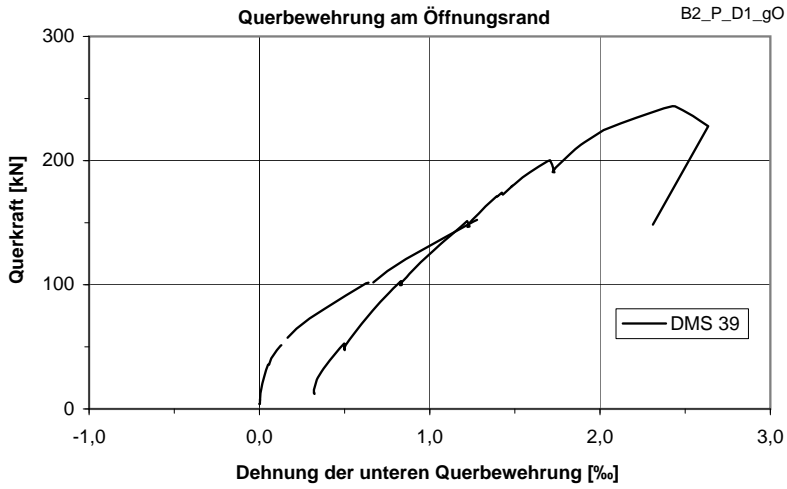


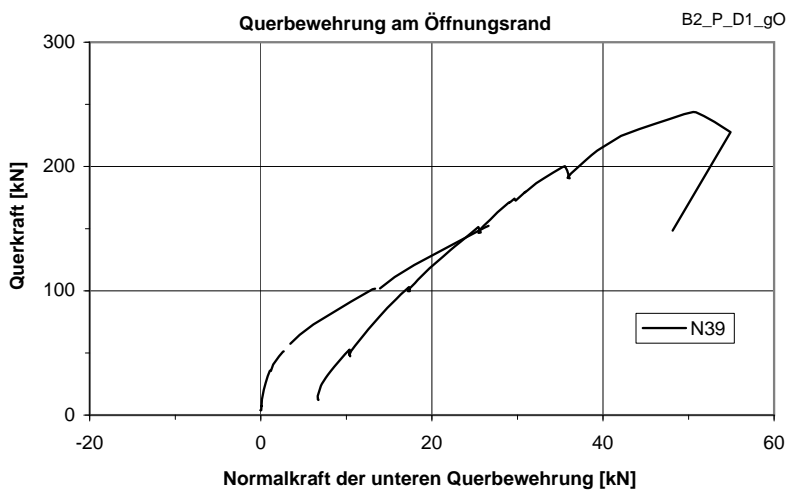
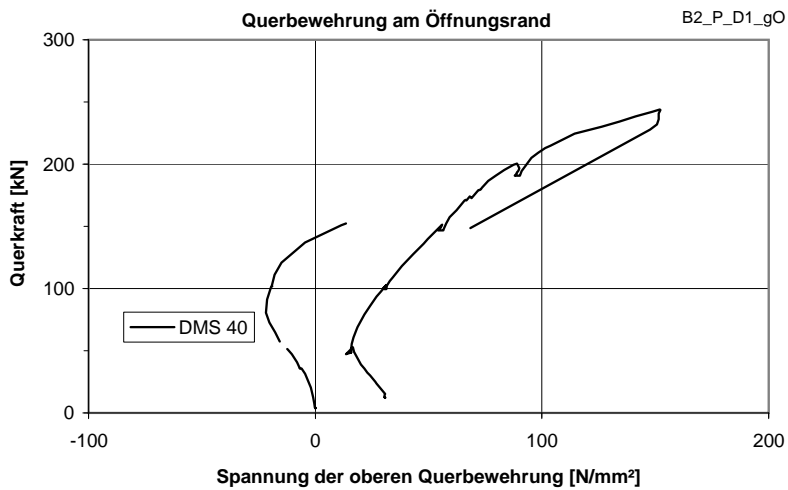
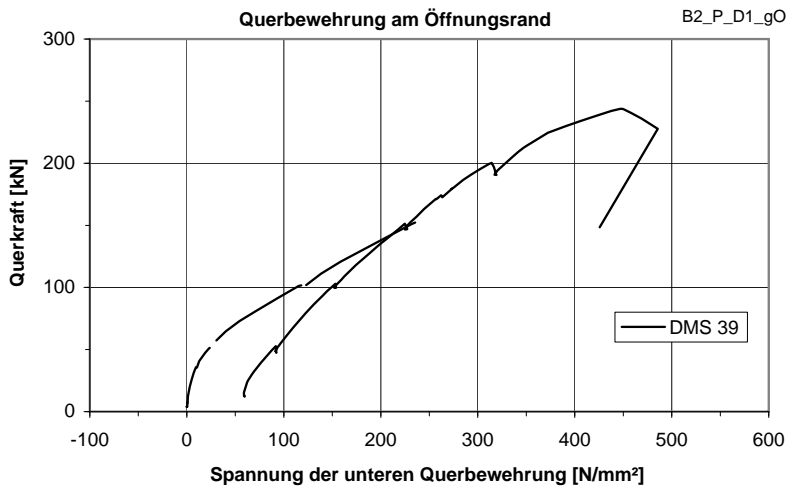


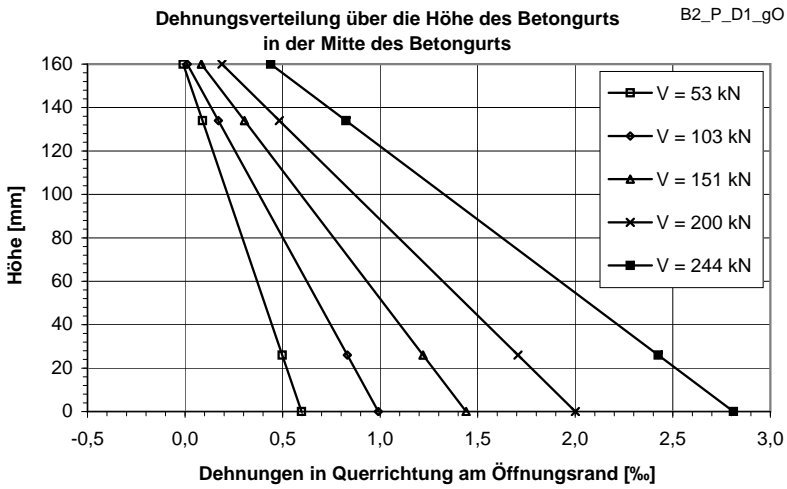
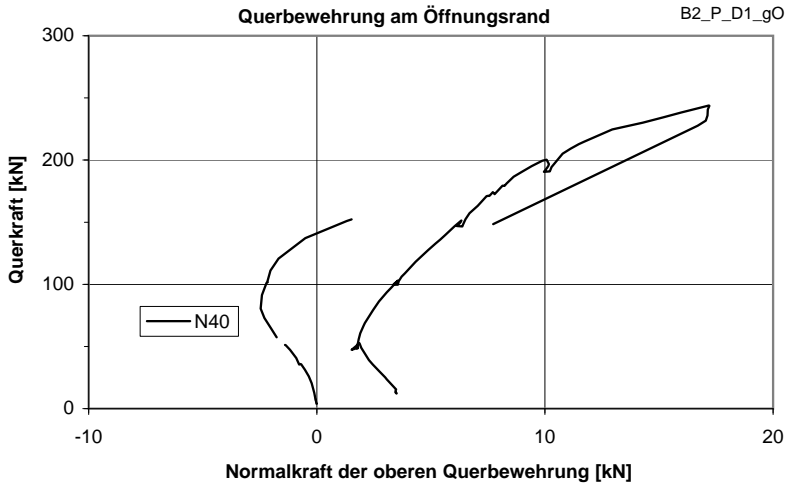




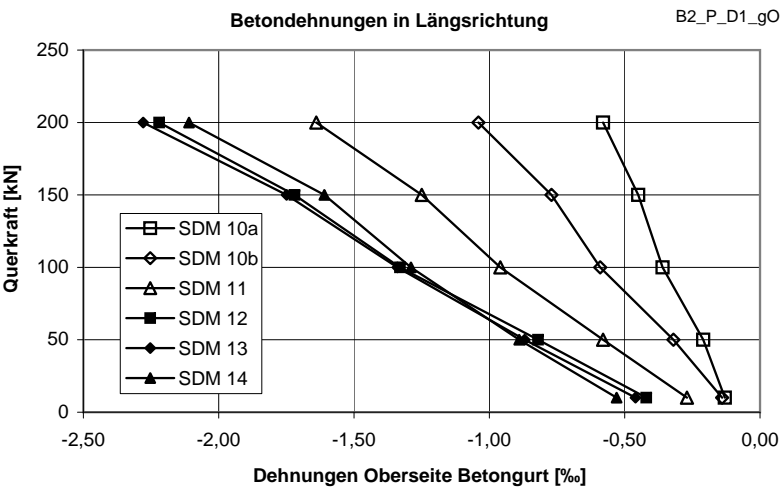
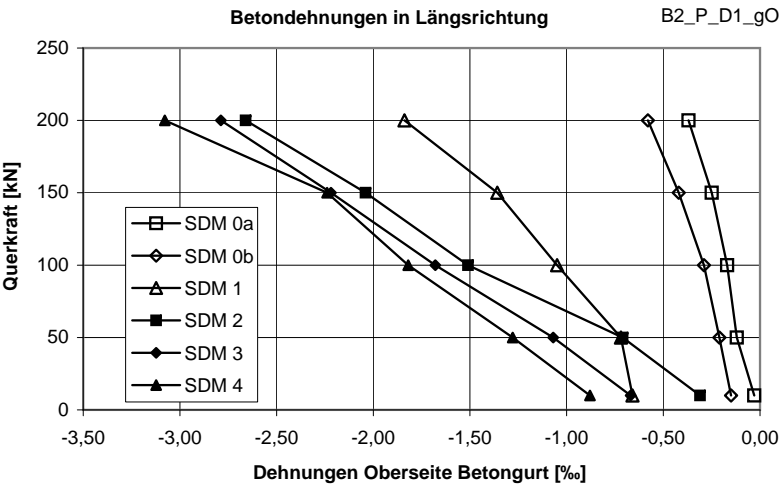
B.22.6. Querbewehrung

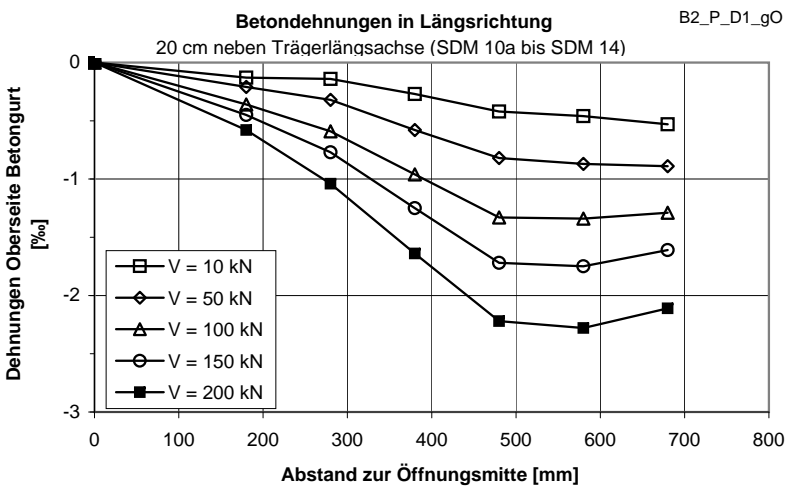
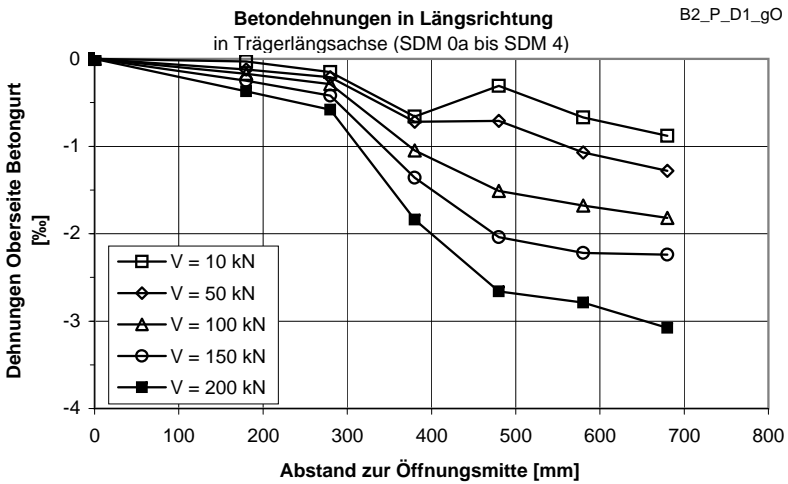
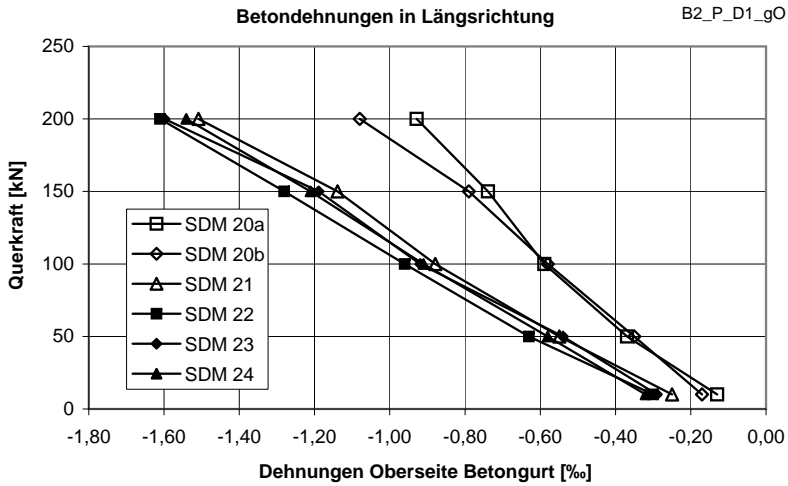


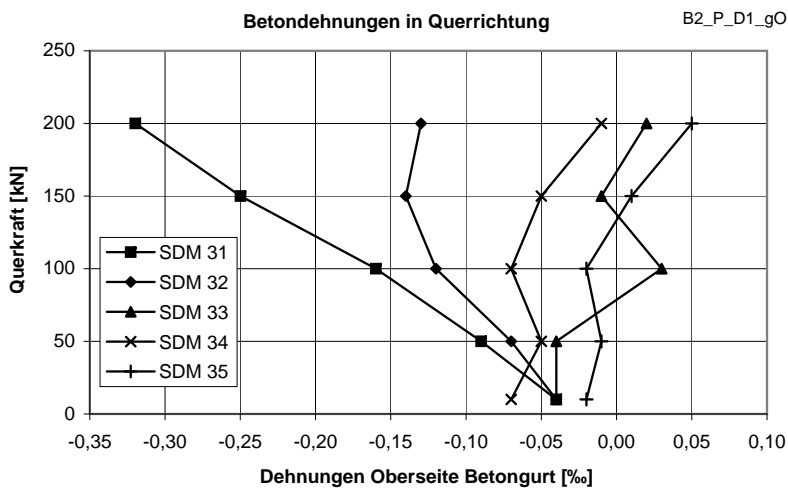
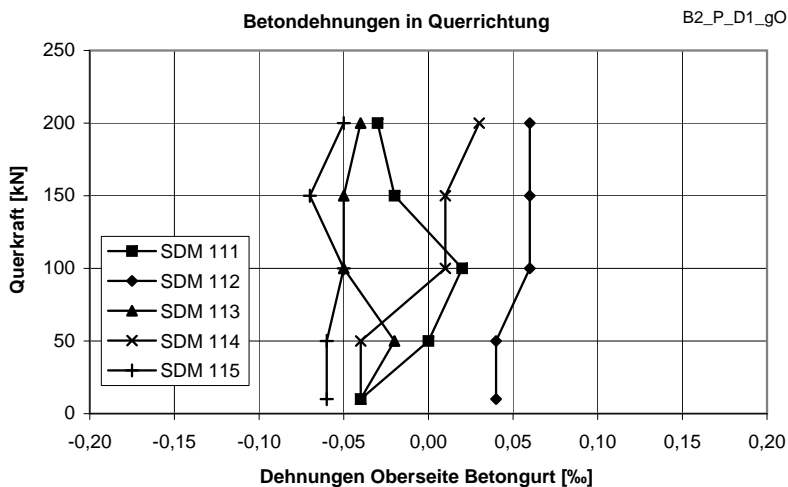
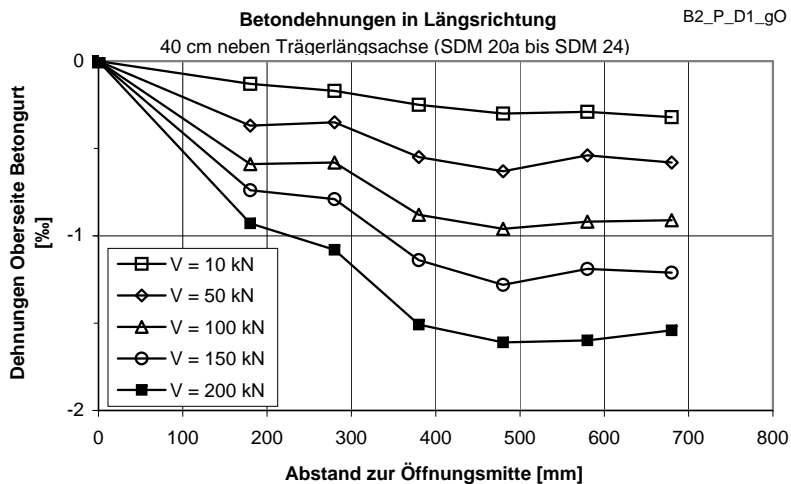


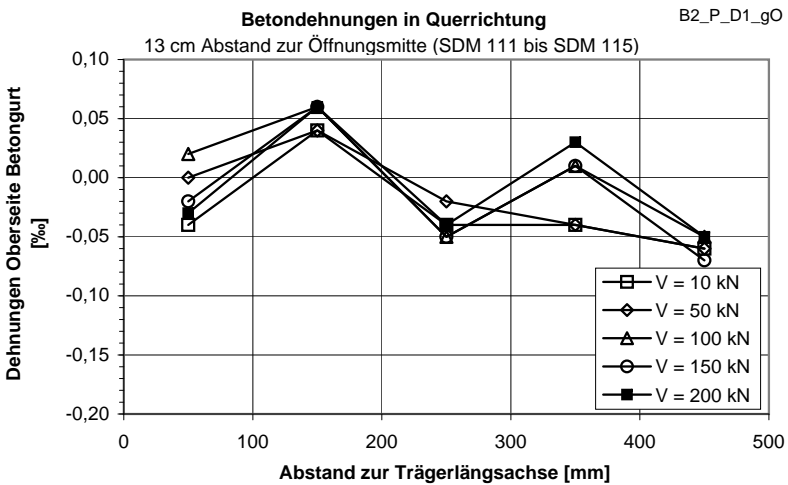
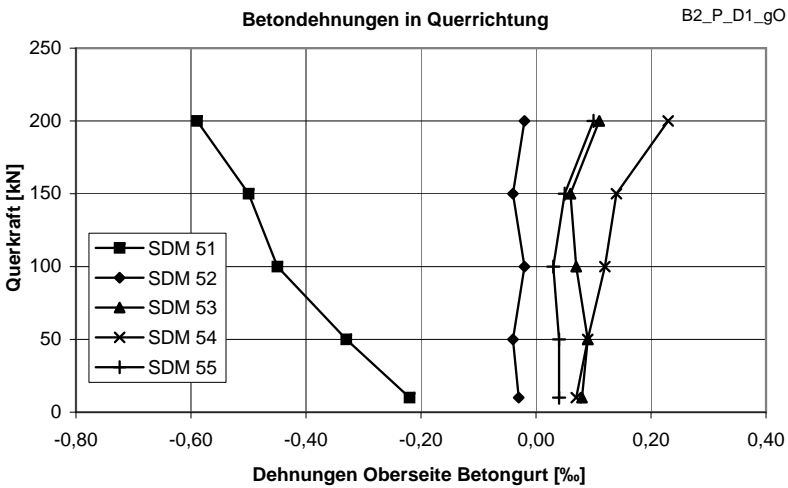
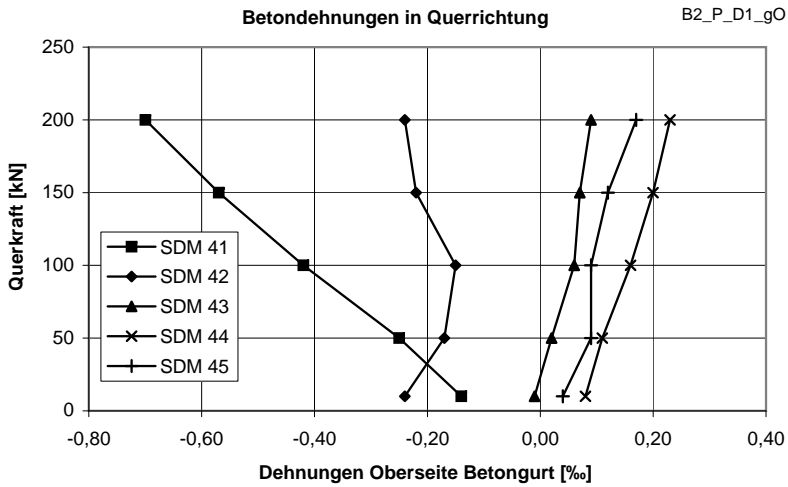


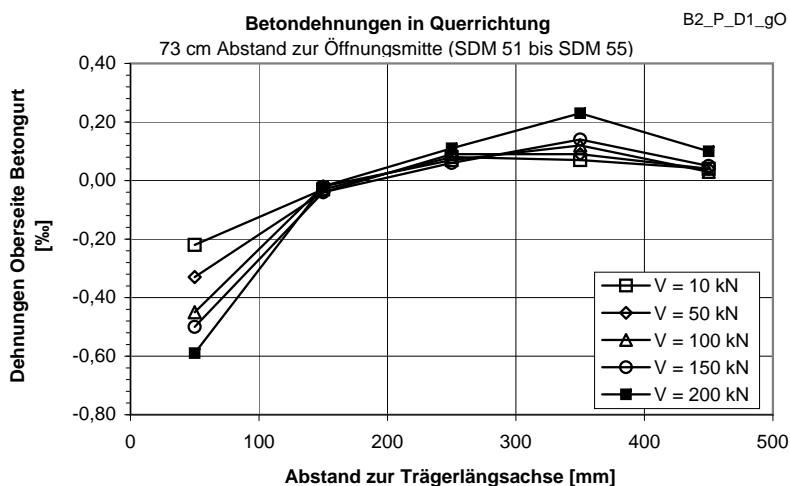
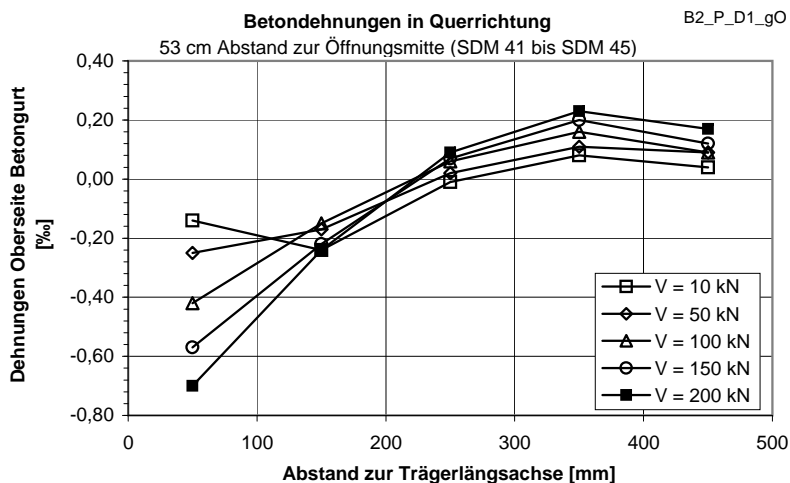
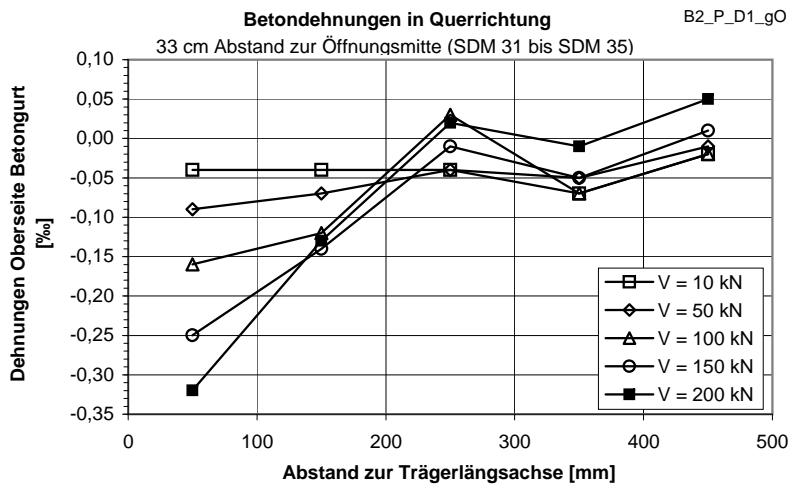
B.22.7. Betondehnungen

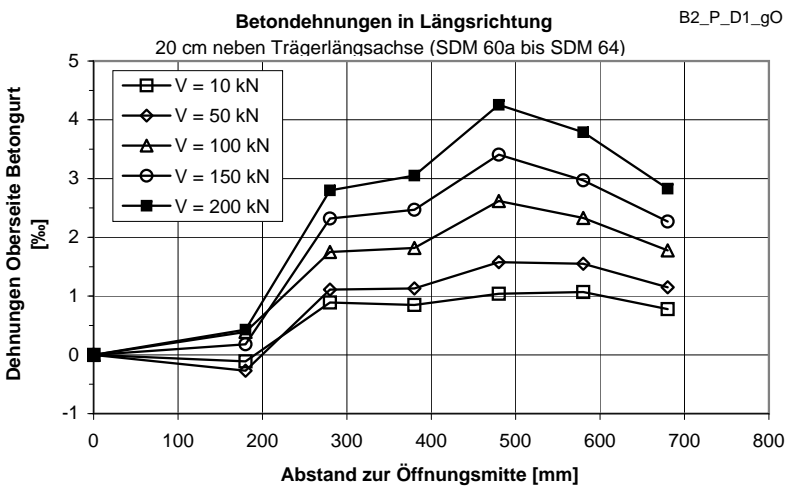
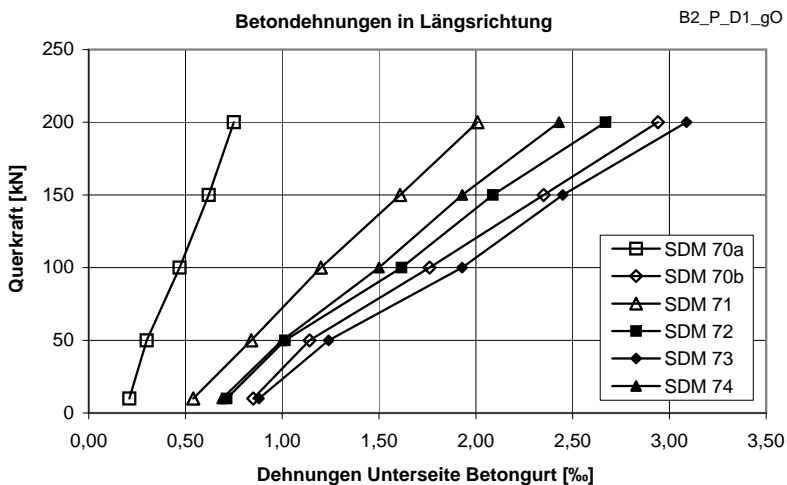
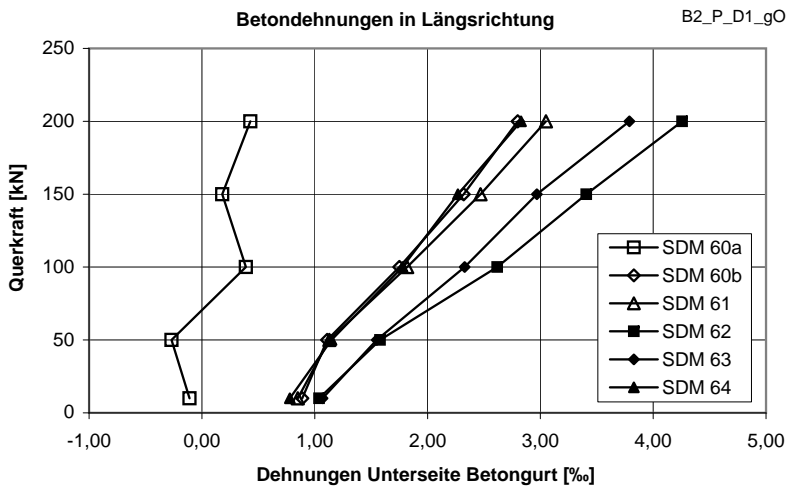


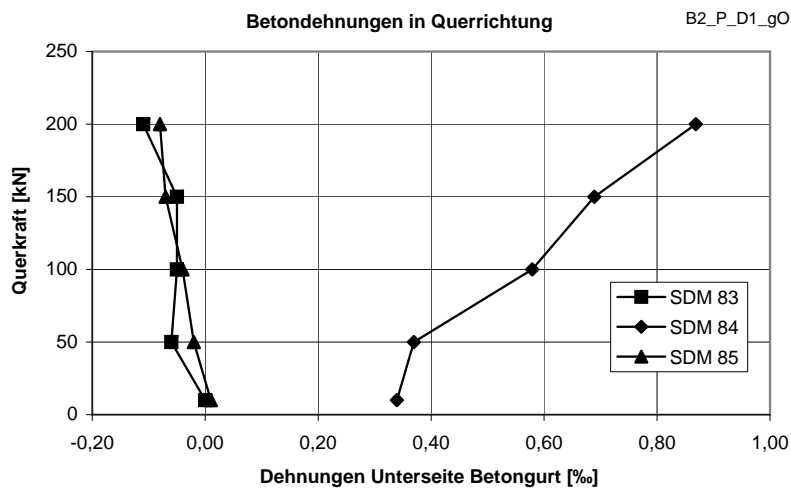
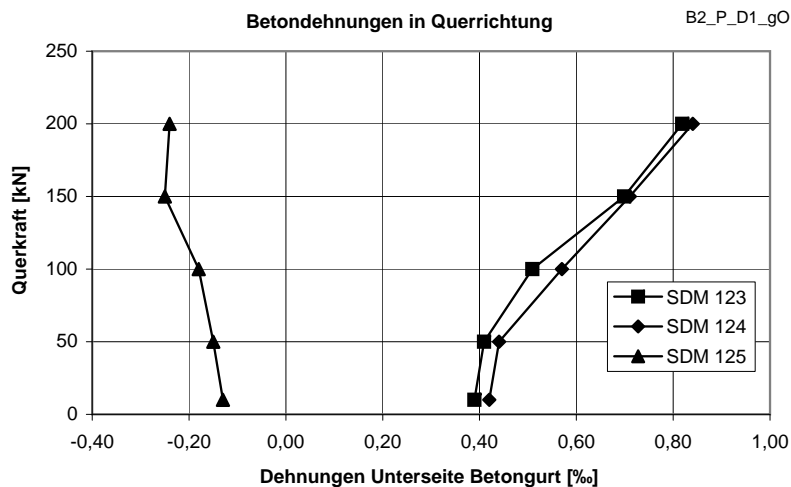
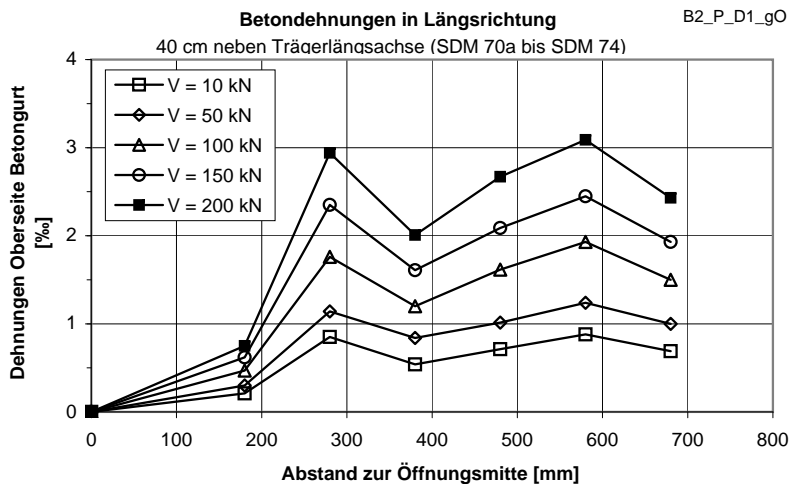


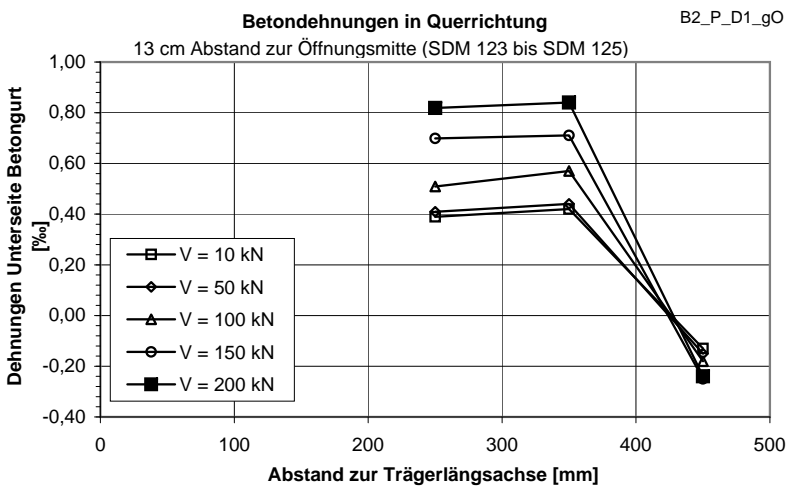
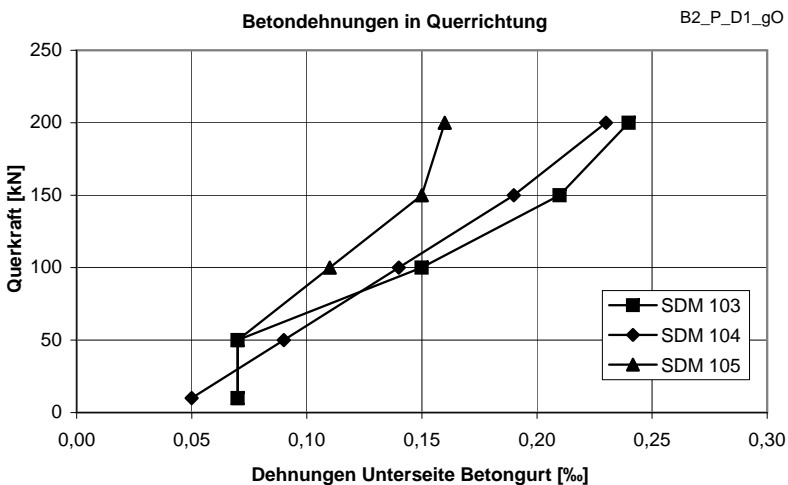
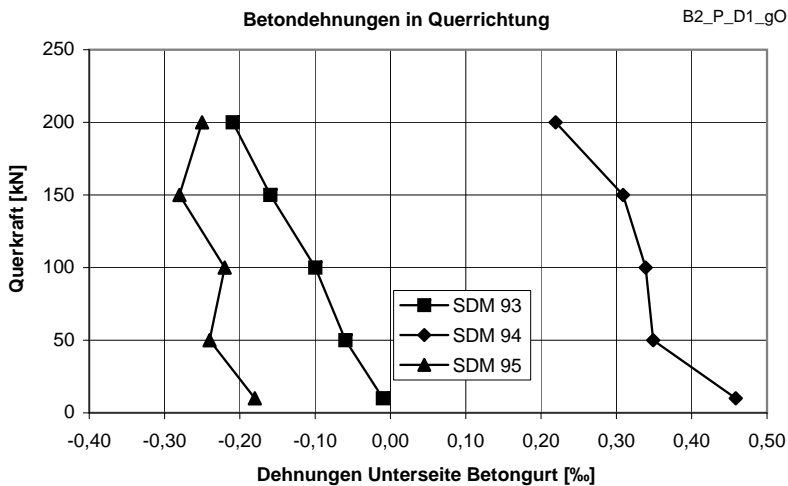


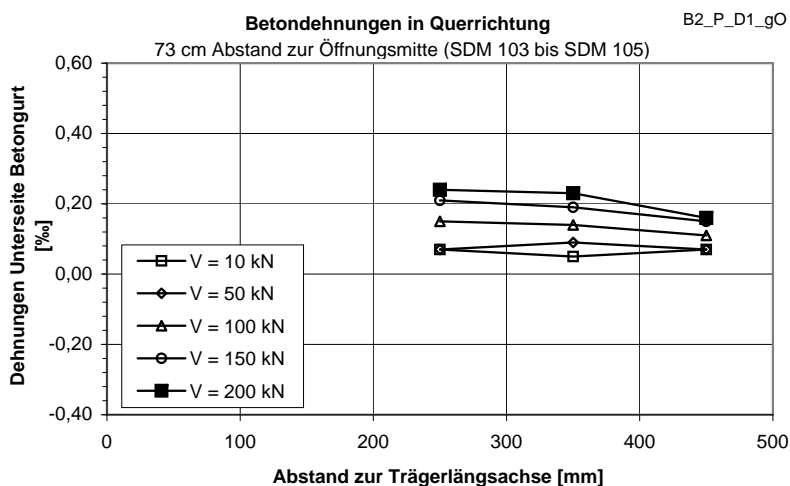
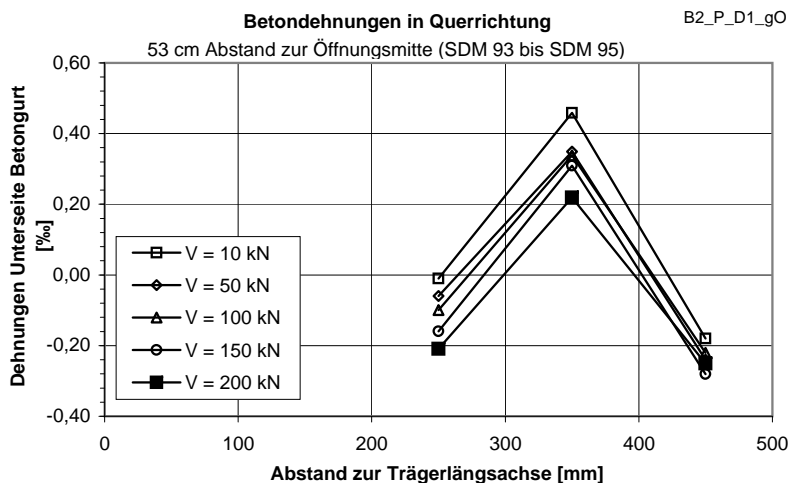
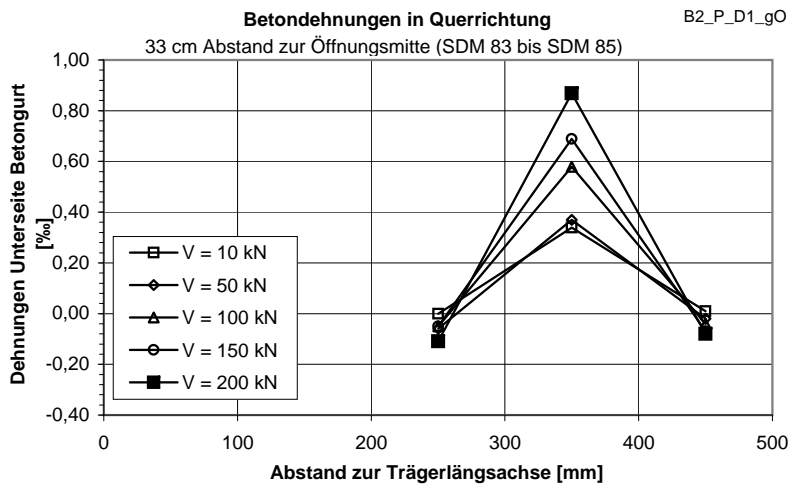






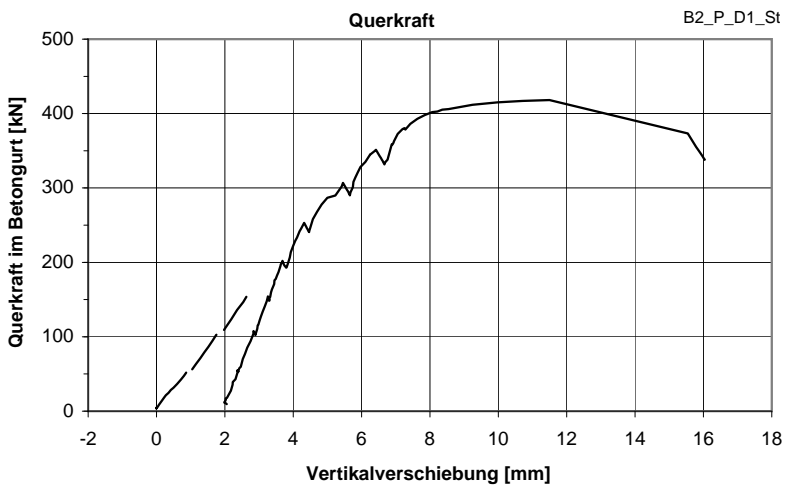
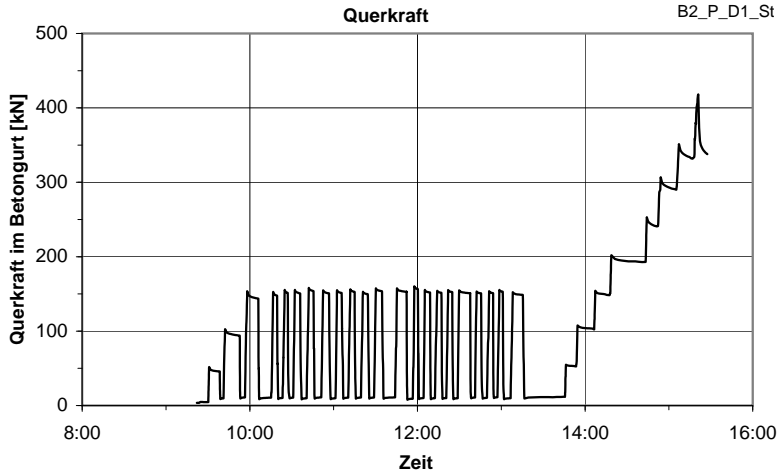


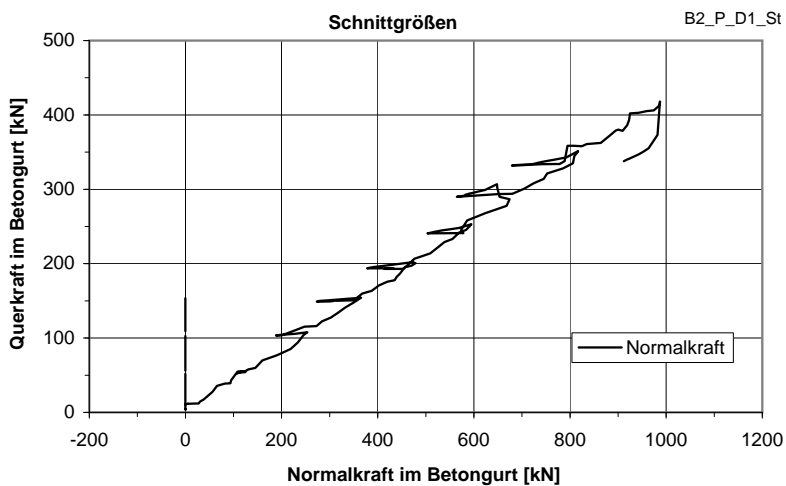
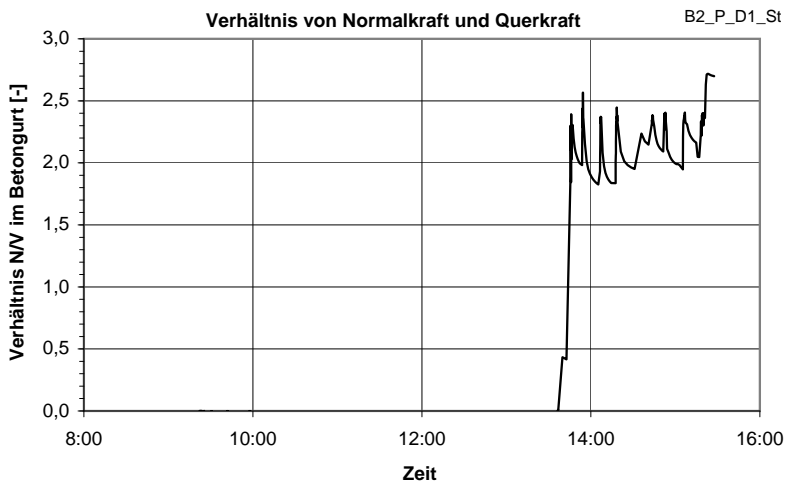
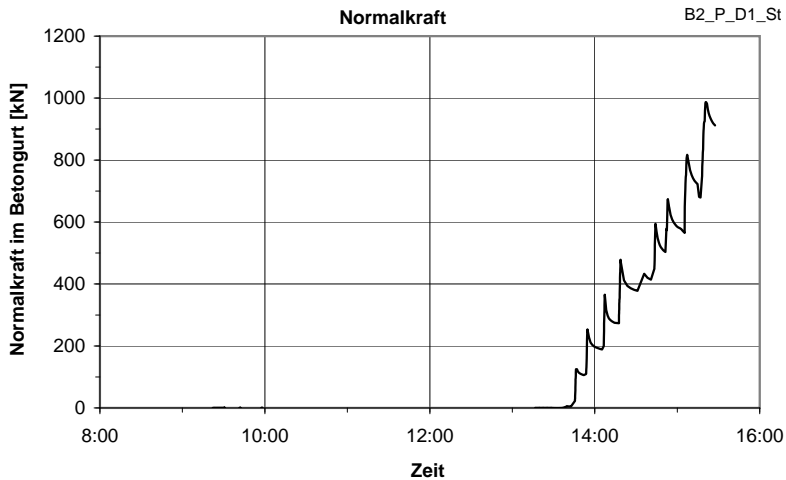


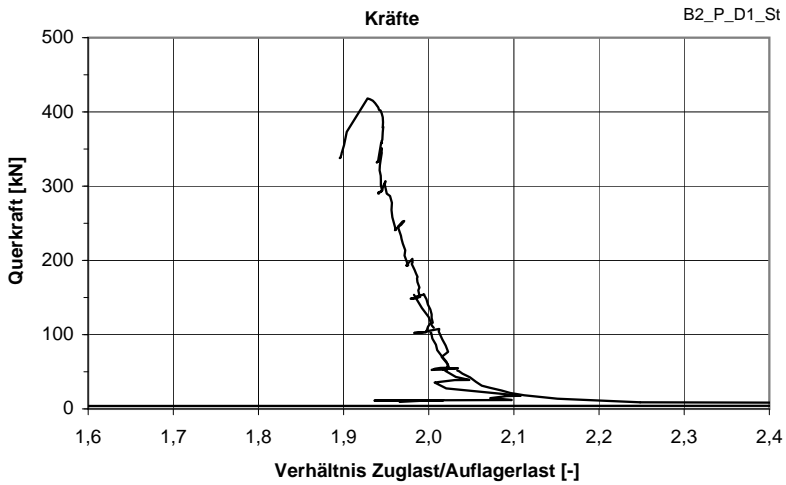
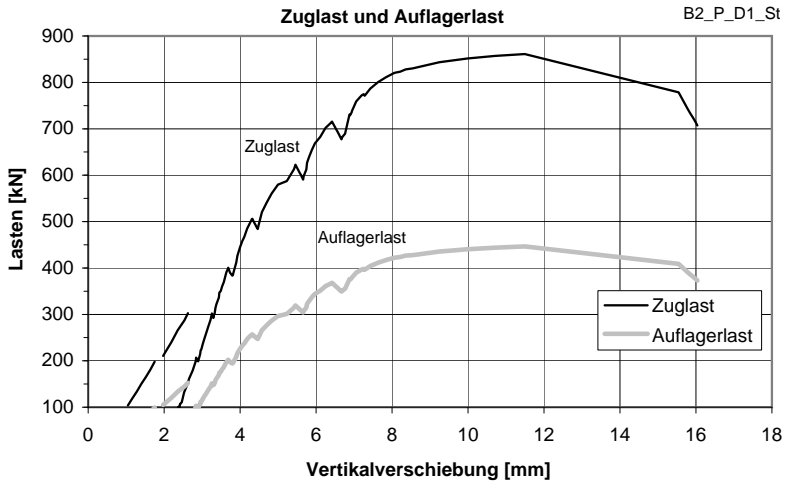


B.23. Versuch B2_P_D1_St

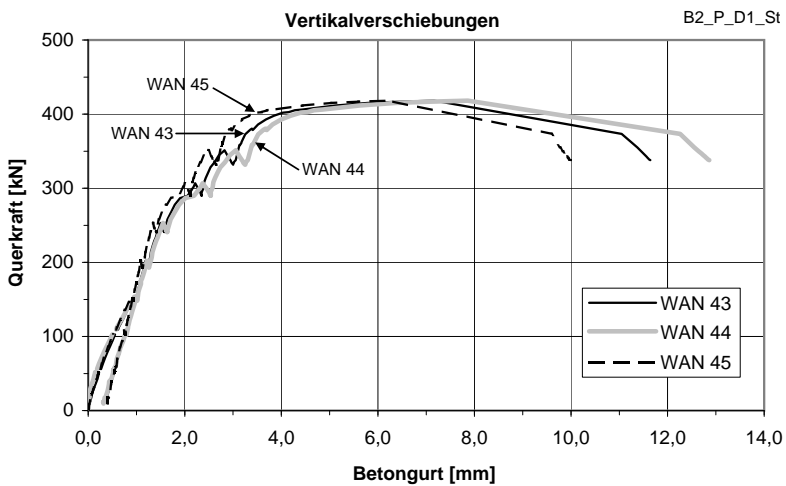
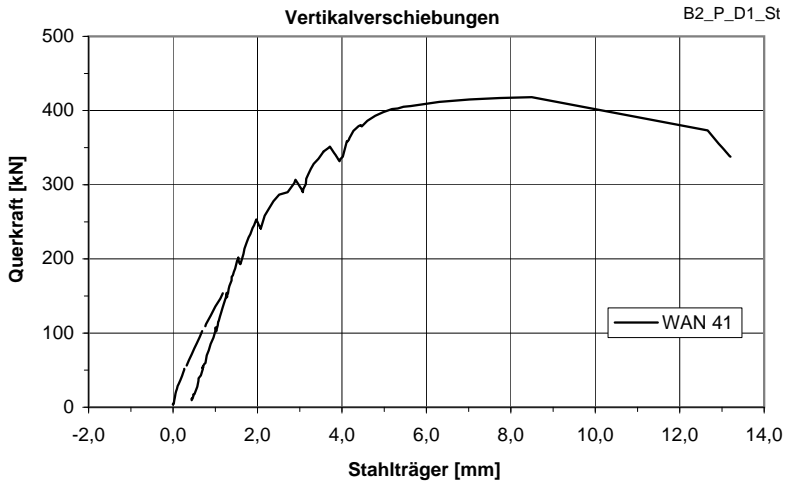
B.23.1. Kräfte

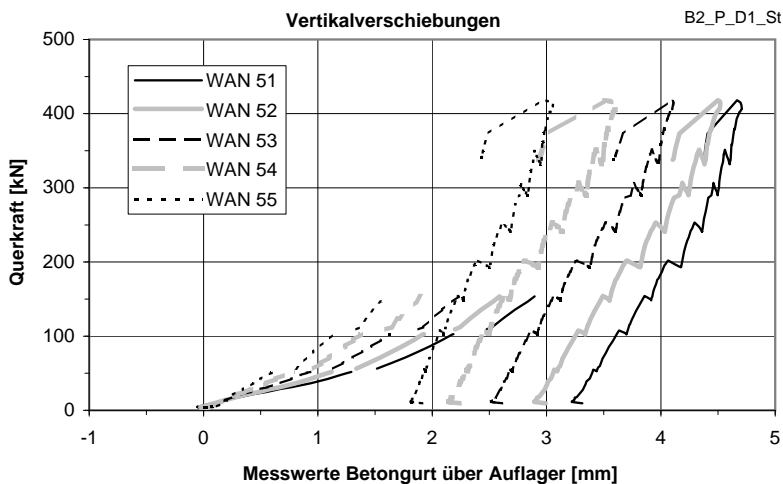
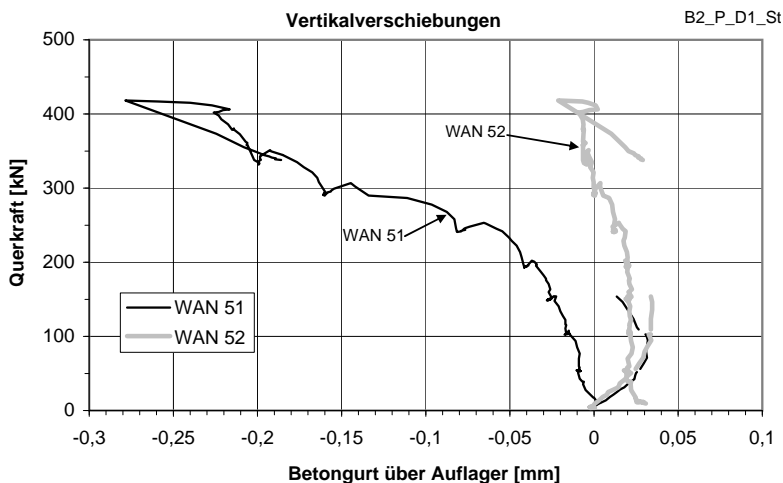
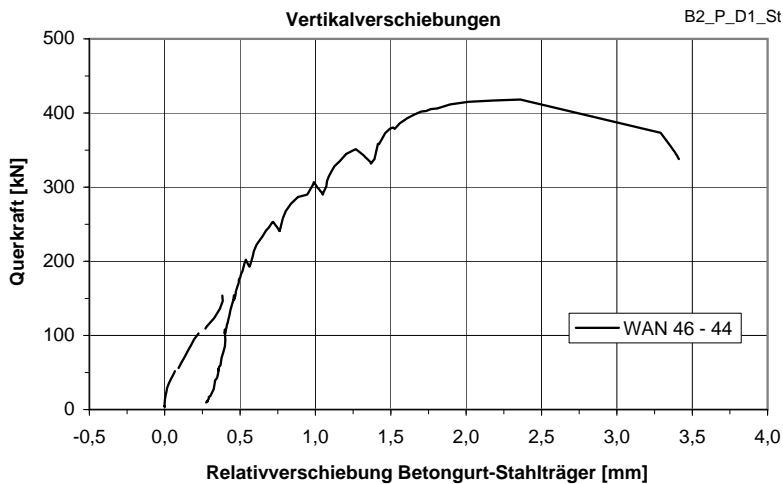




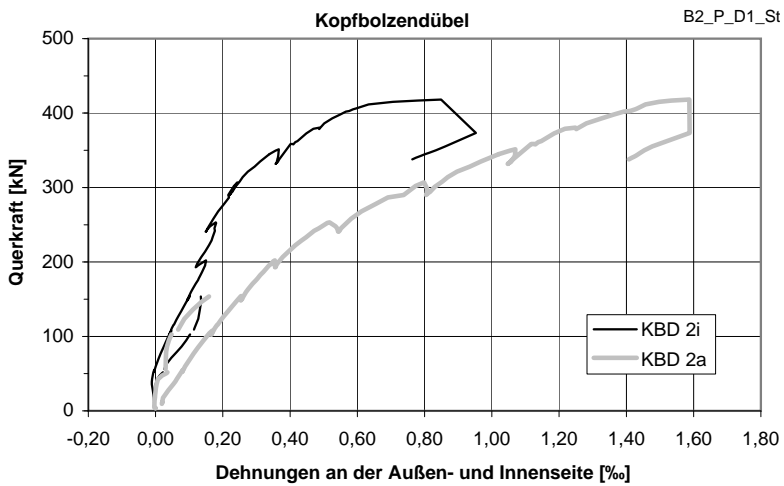
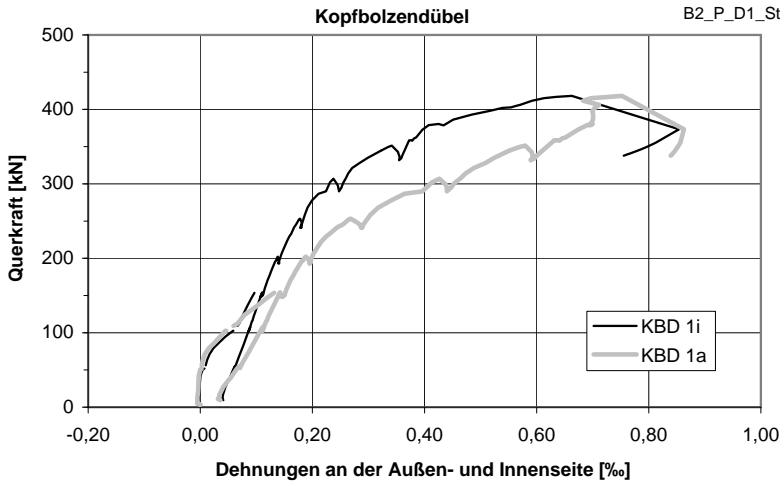


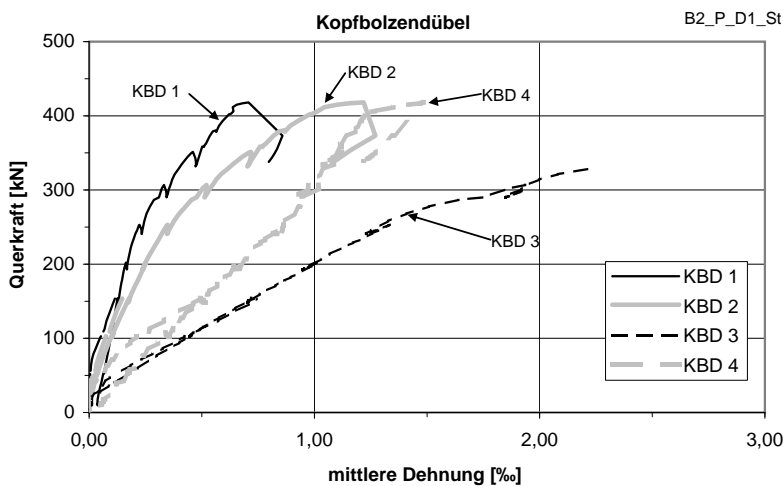
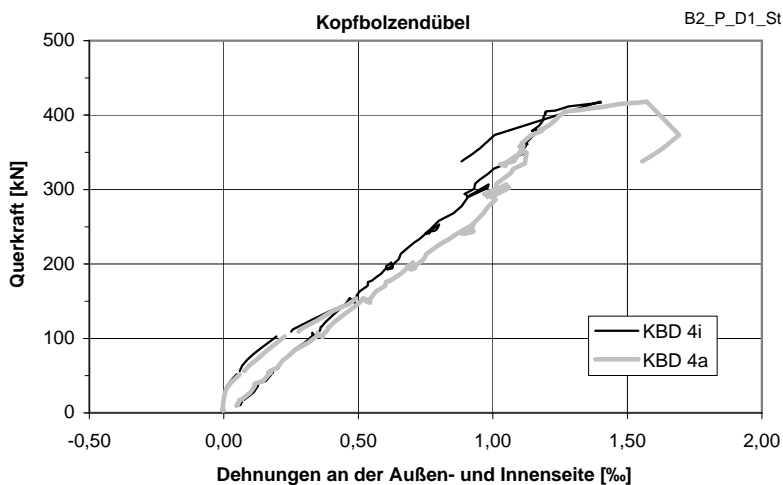
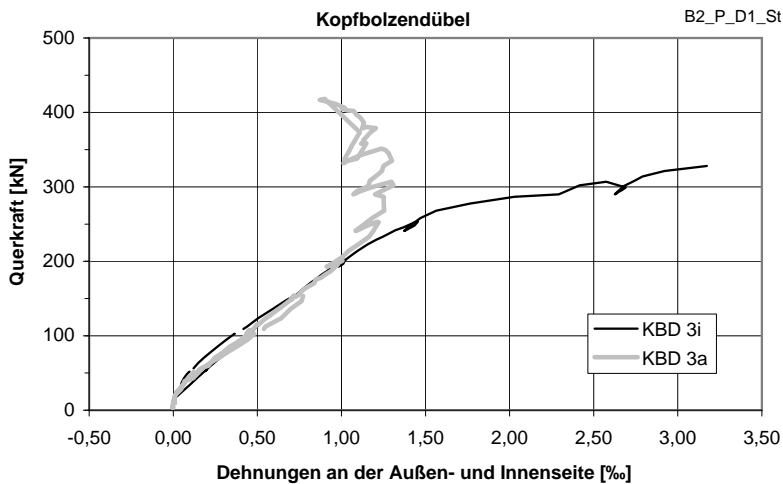
B.23.2. Verformungen

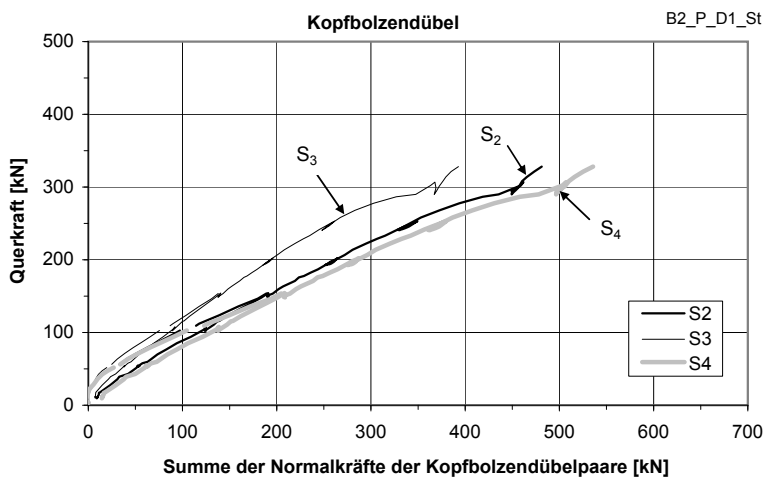
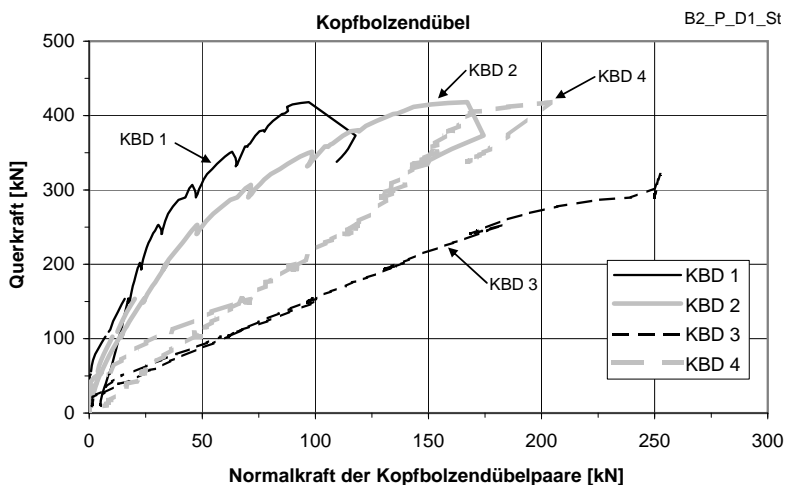
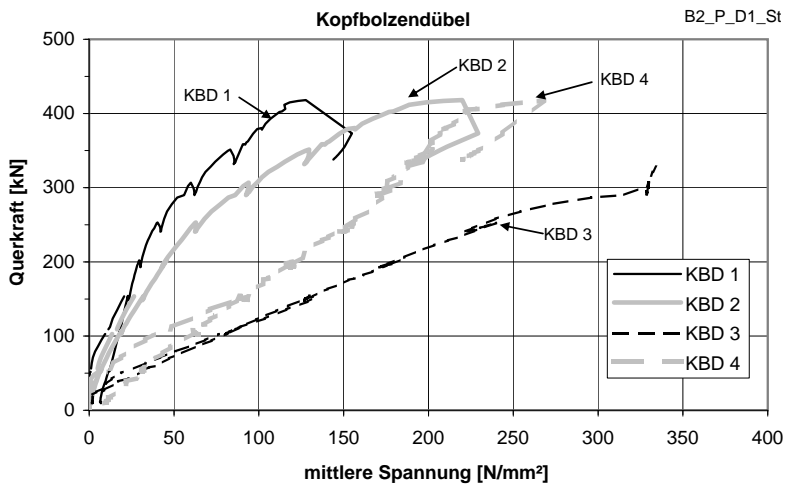




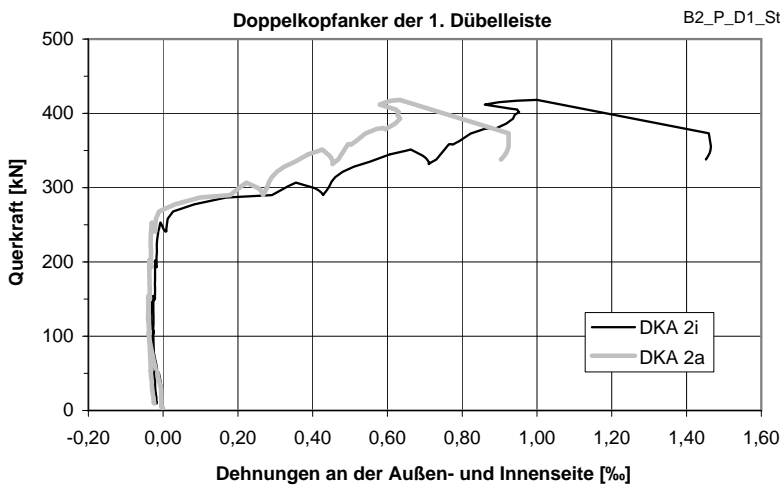
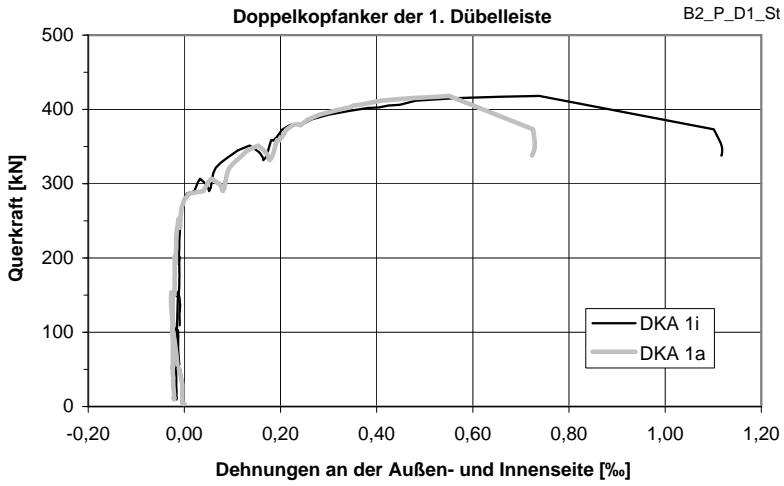
B.23.3. Kopfbolzendübel

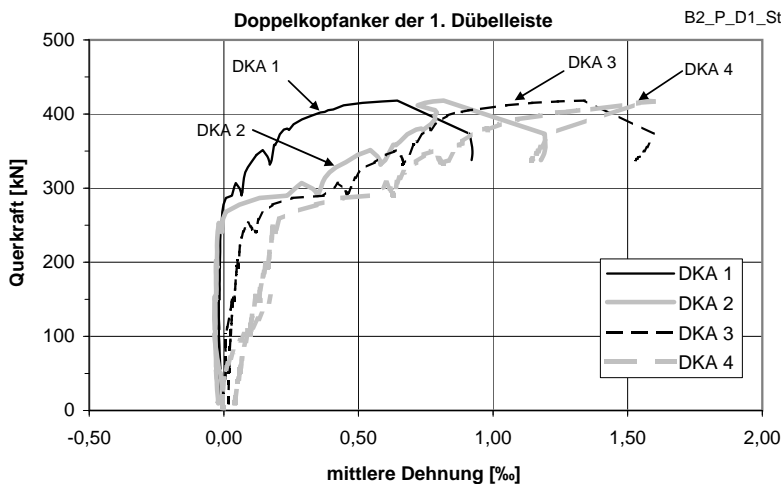
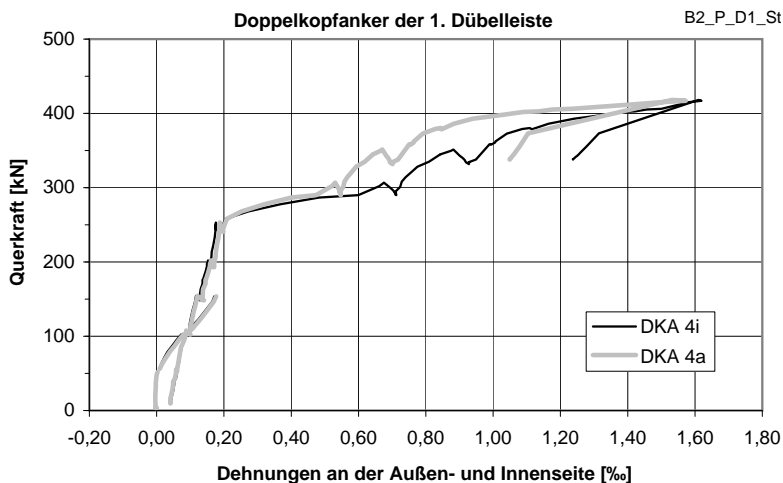
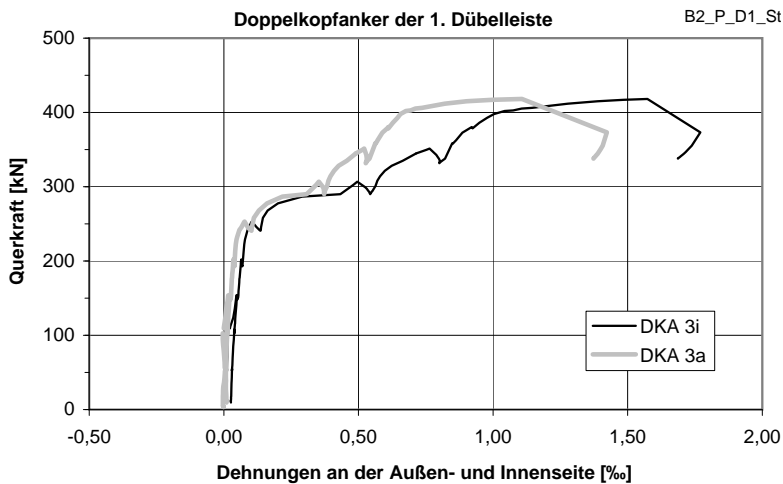


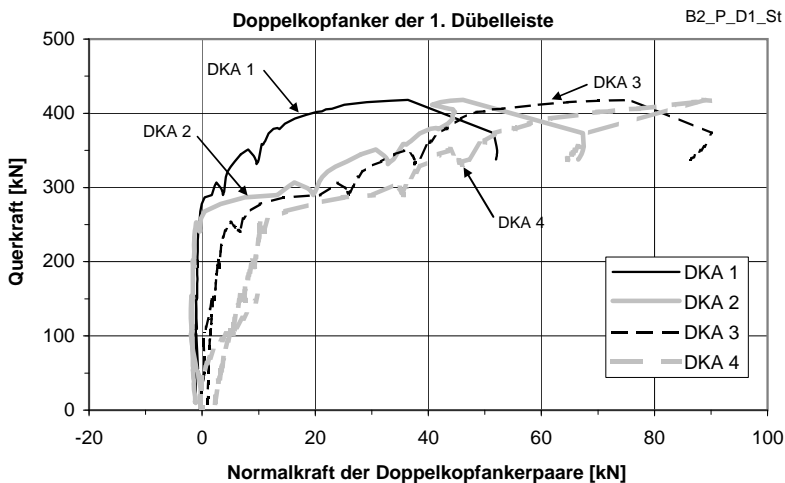
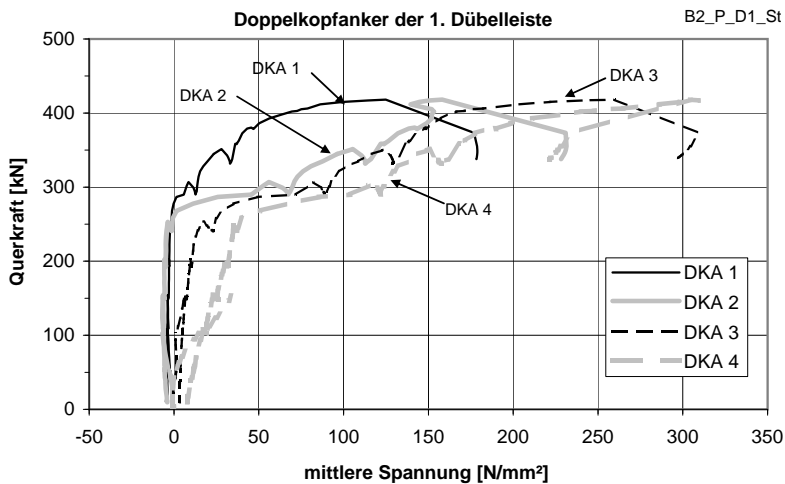




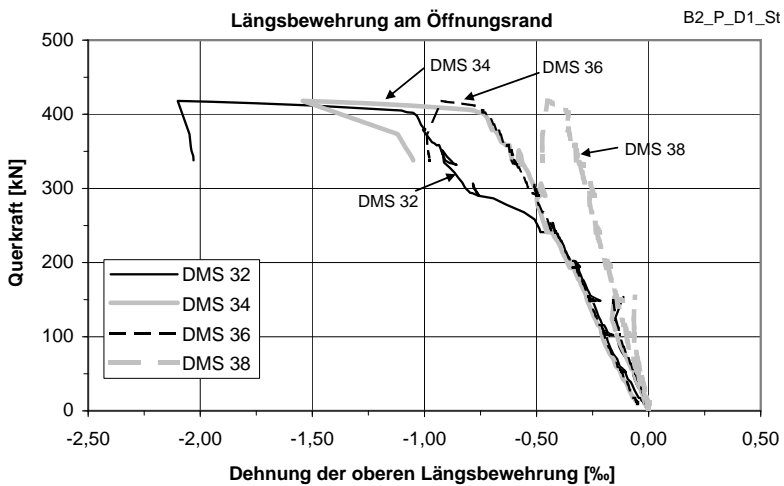
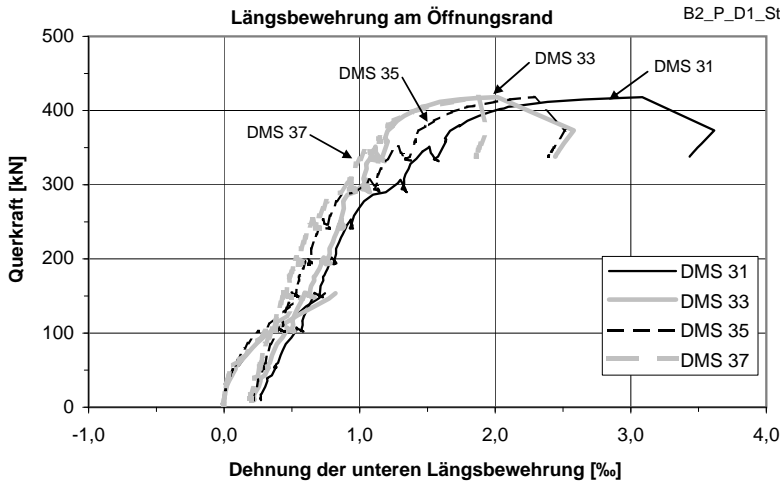
B.23.4. Doppelkopfkanker

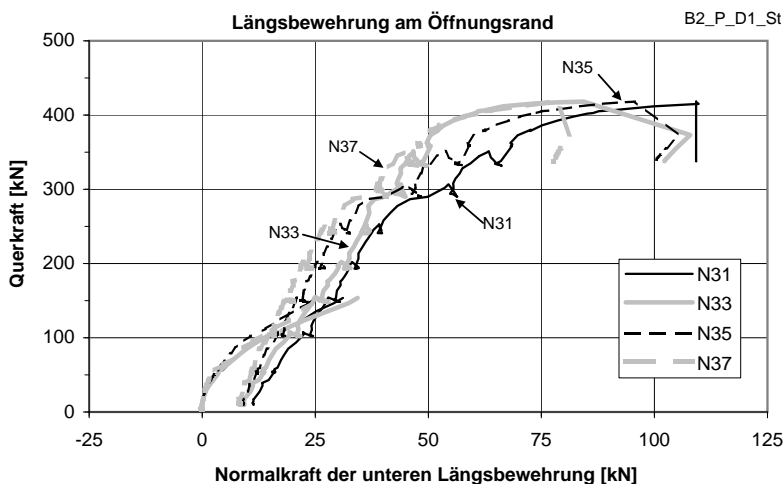
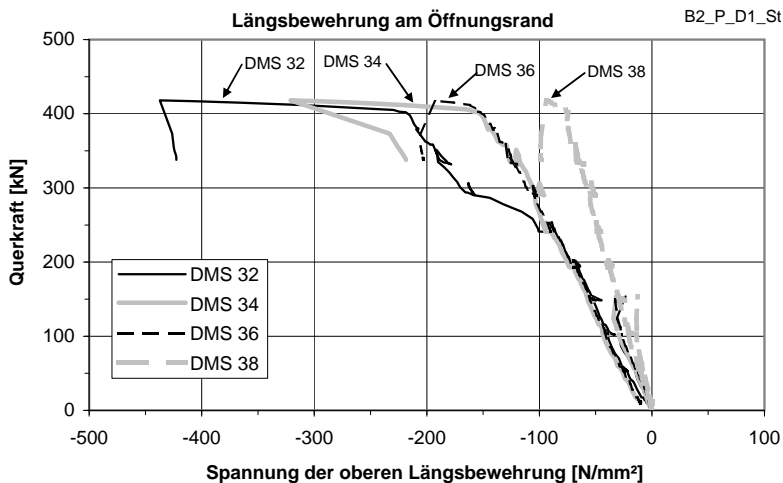
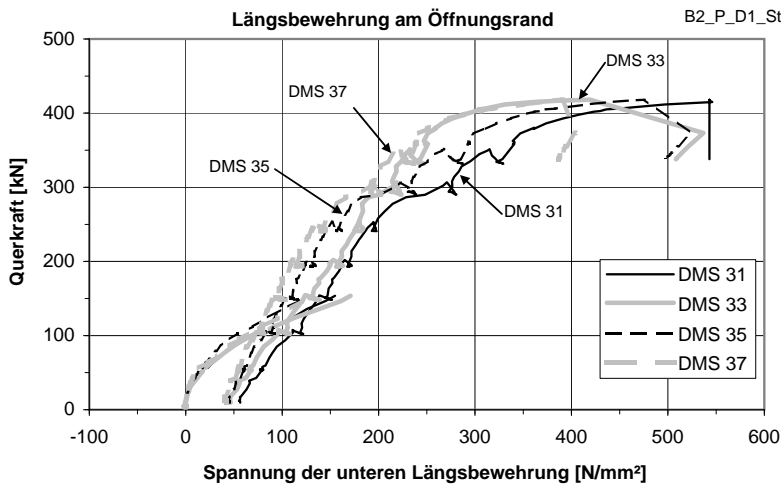


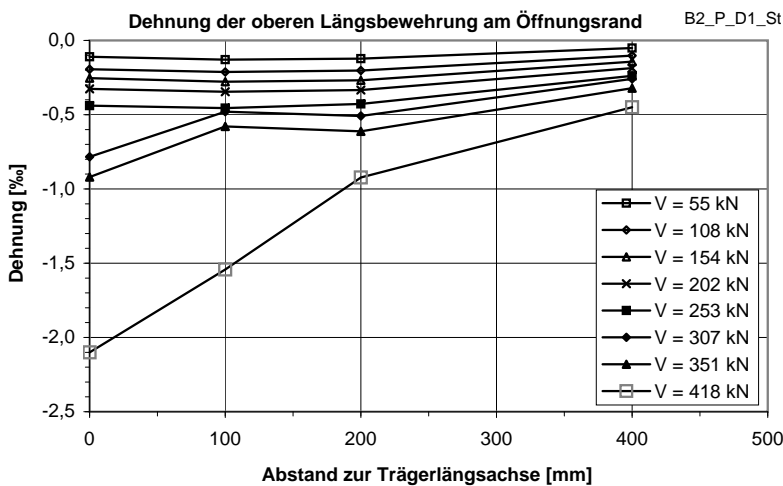
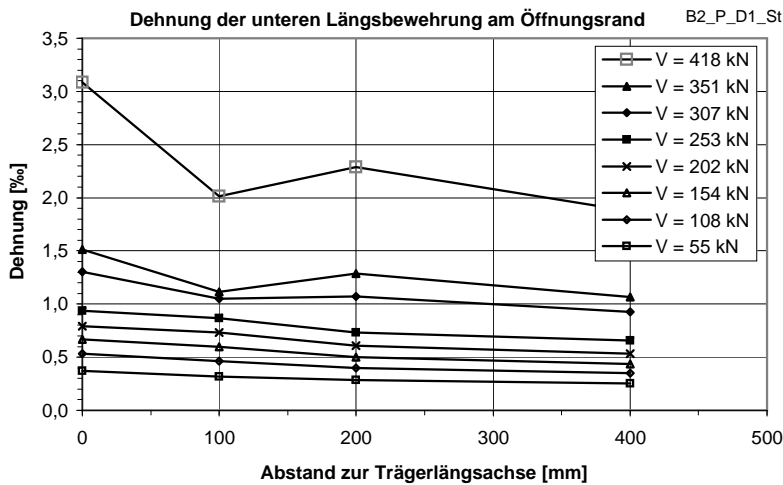
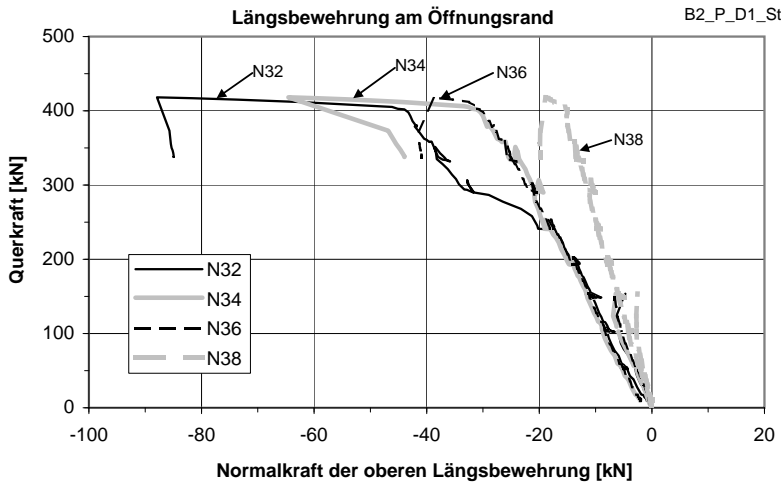


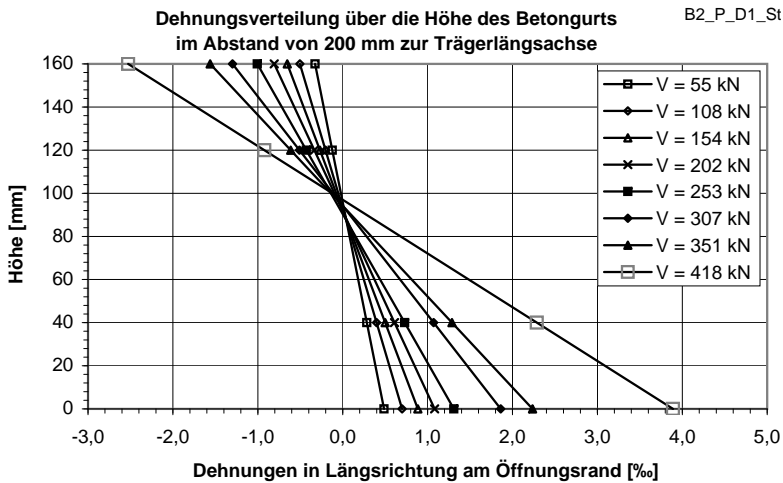
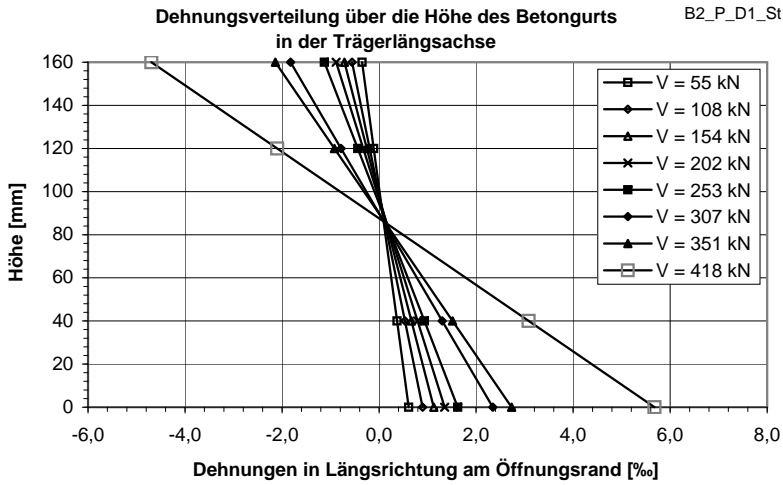


B.23.5. Längsbewehrung

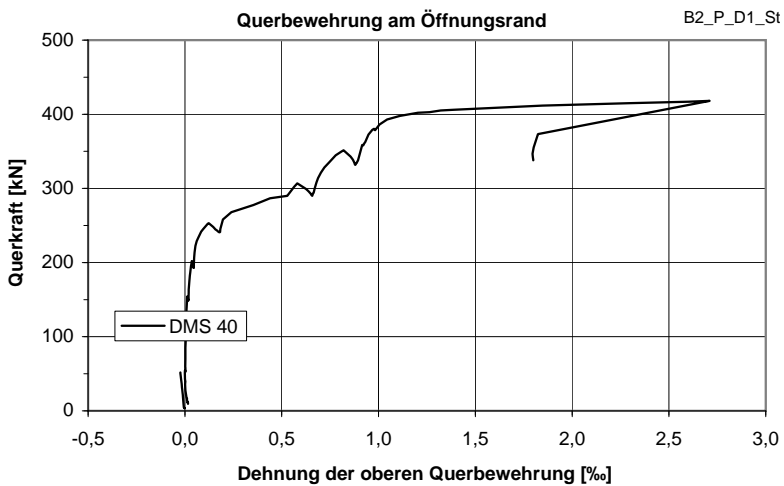
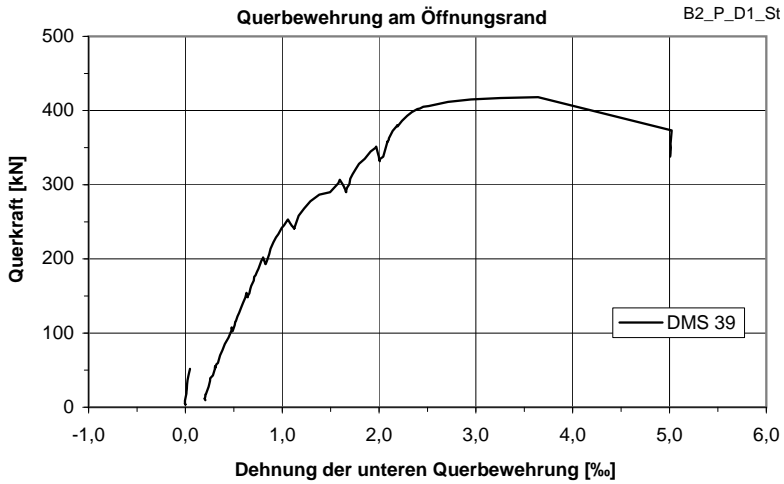


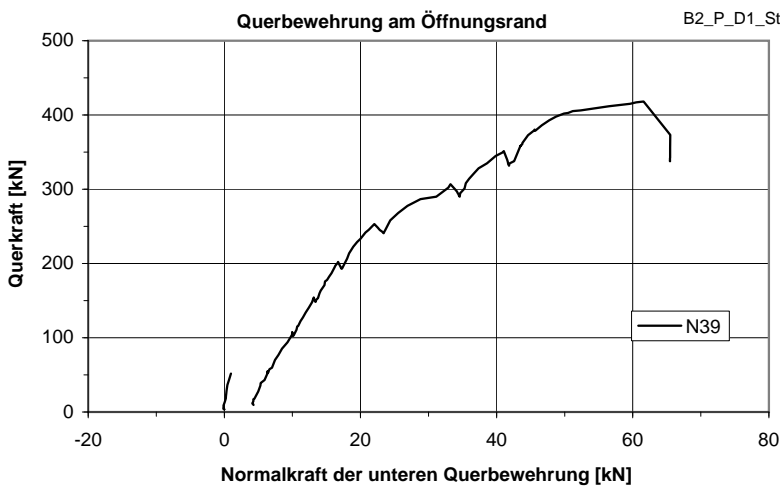
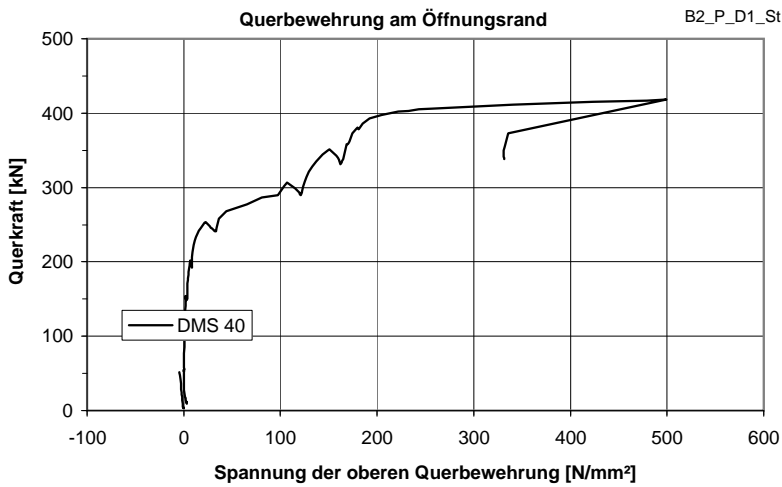
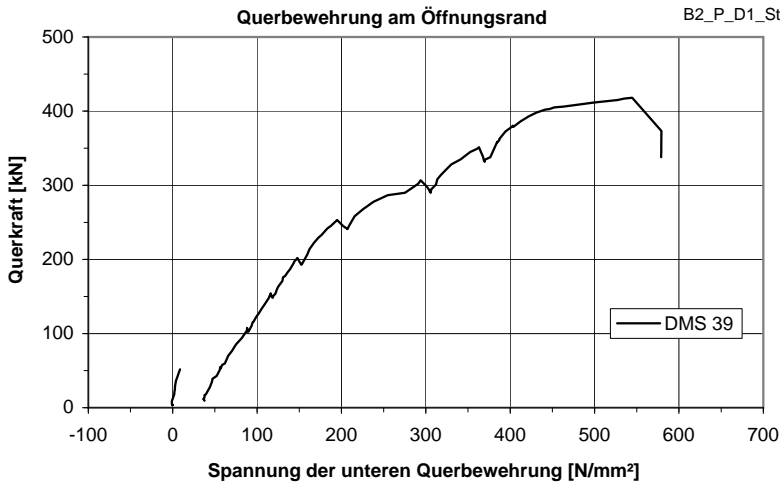


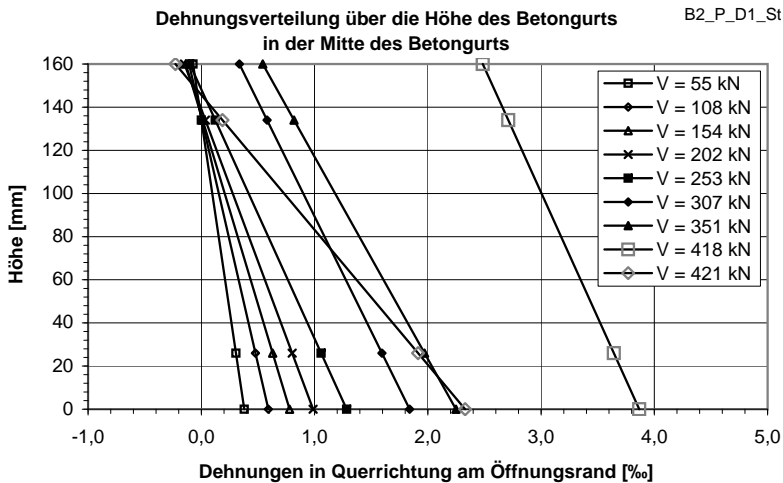
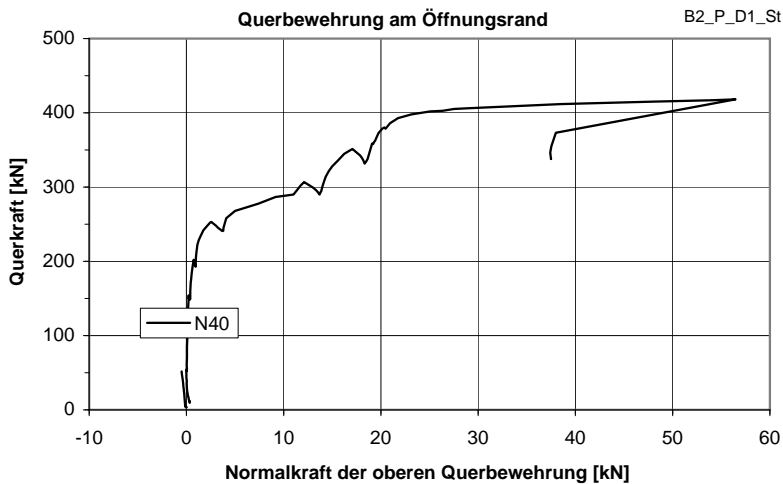




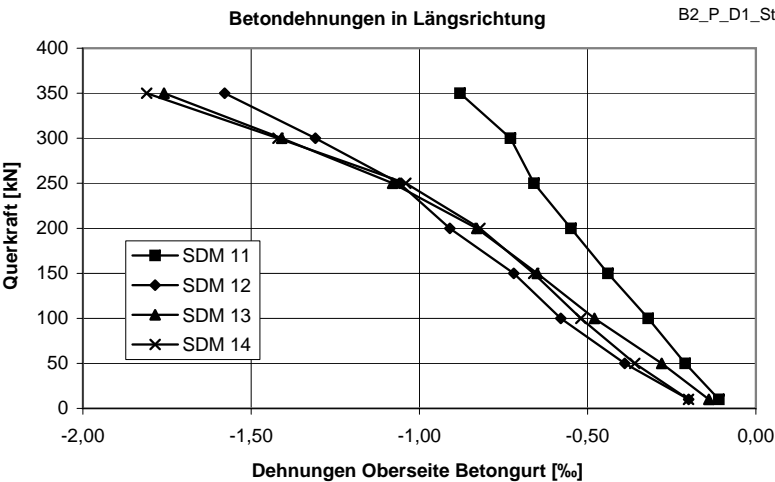
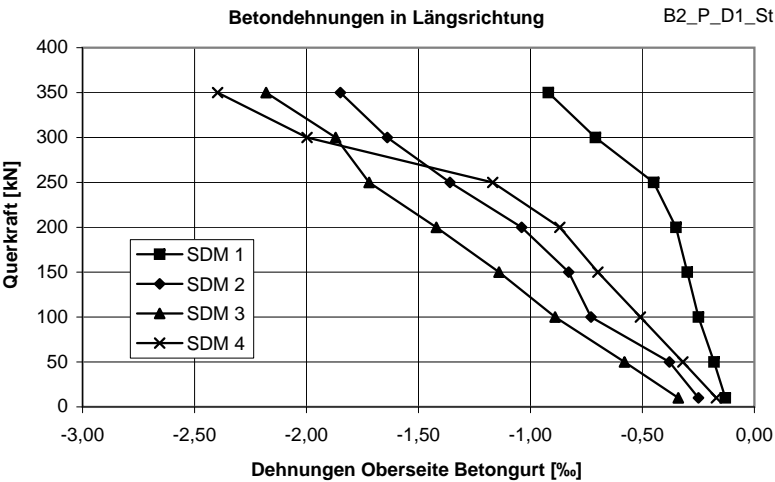
B.23.6. Querbewehrung

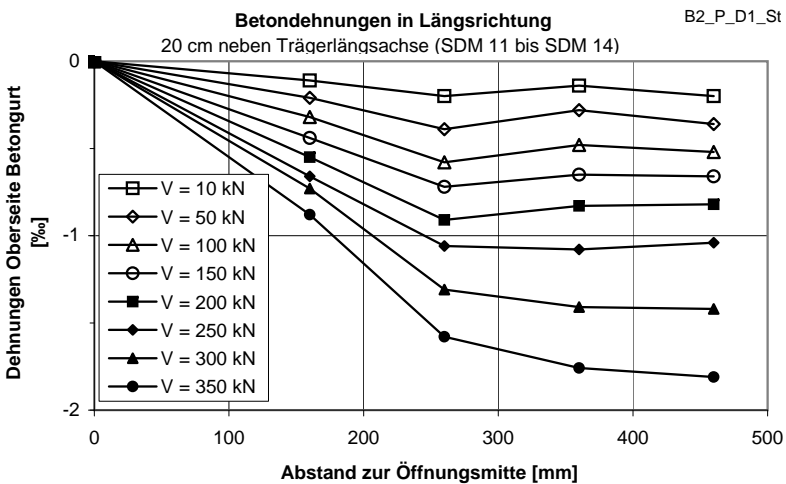
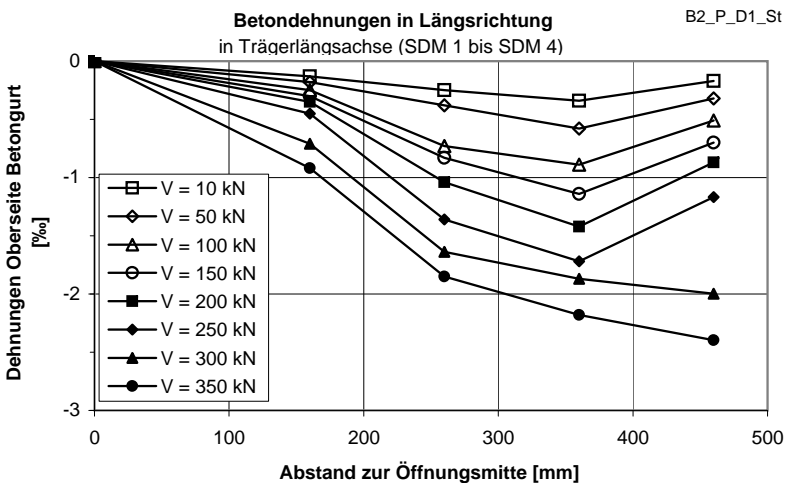
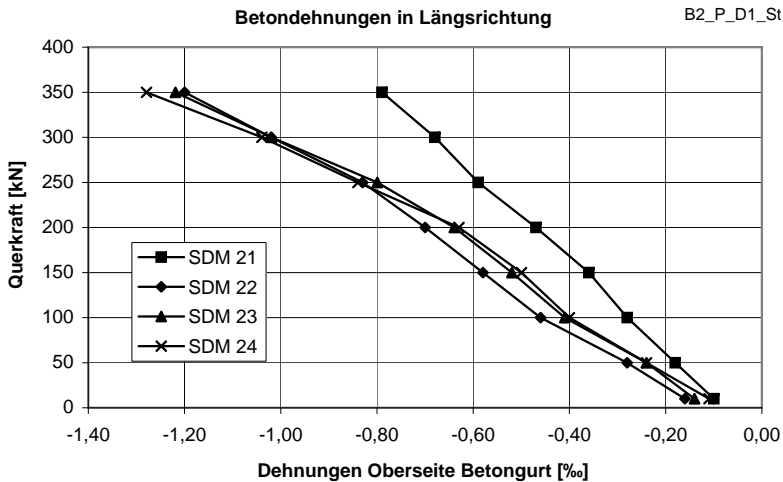


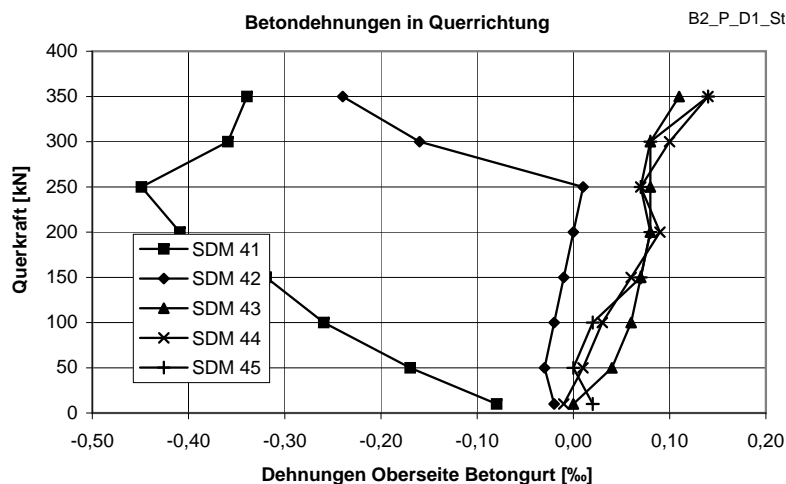
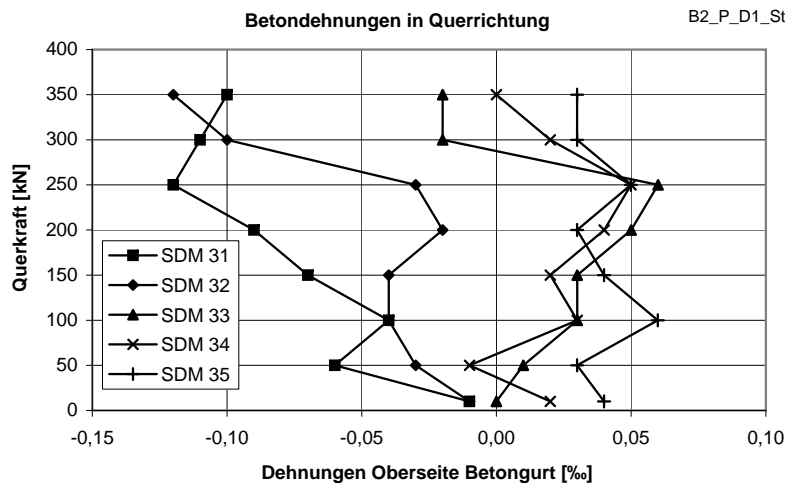
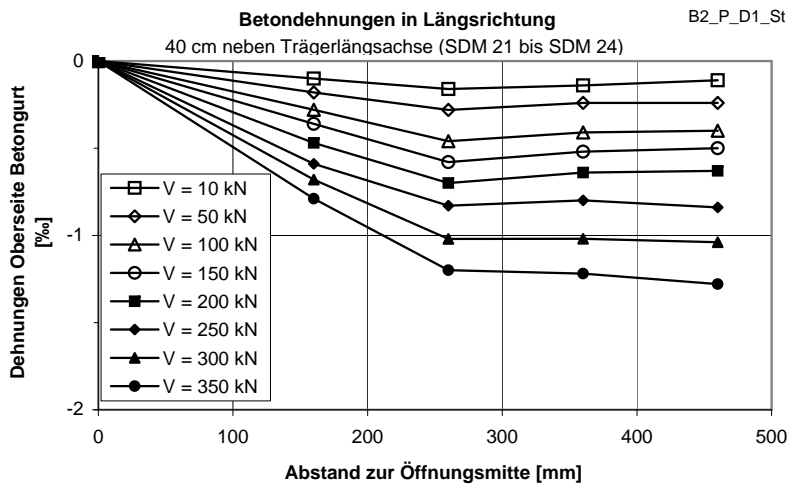


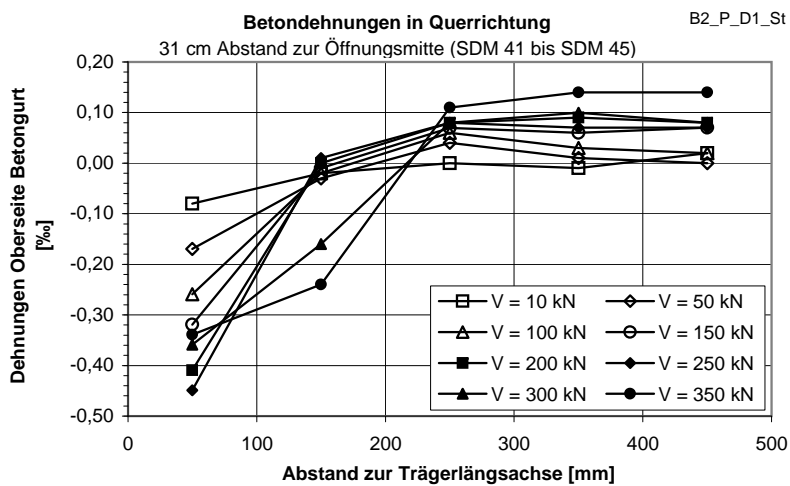
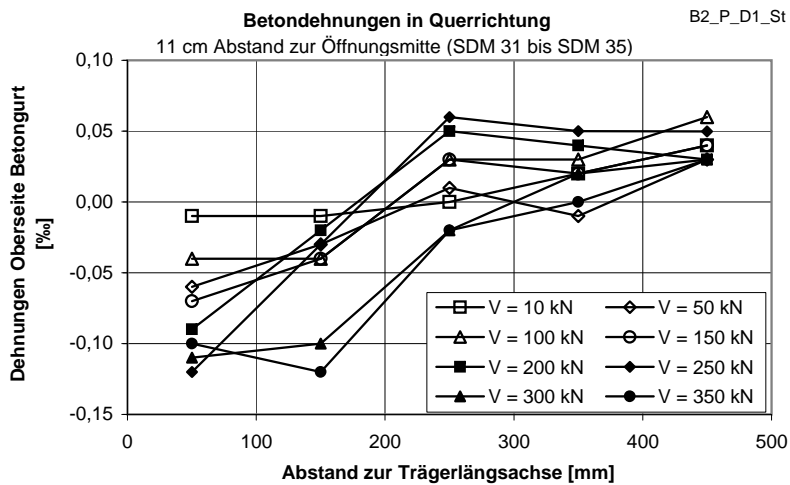
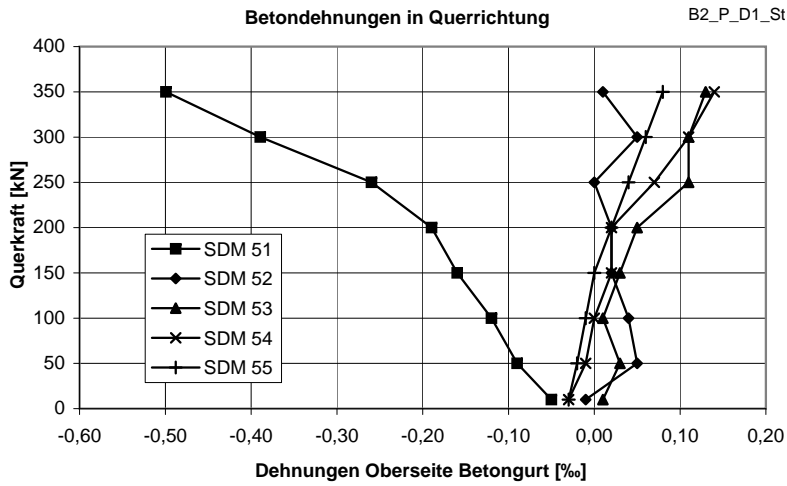


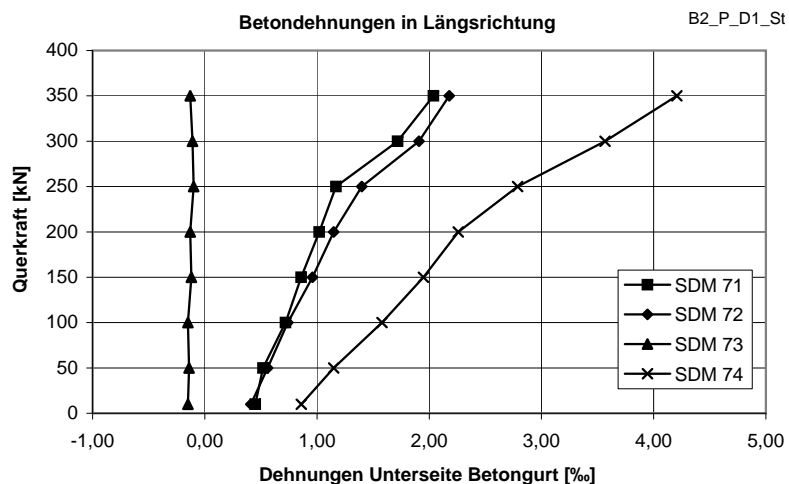
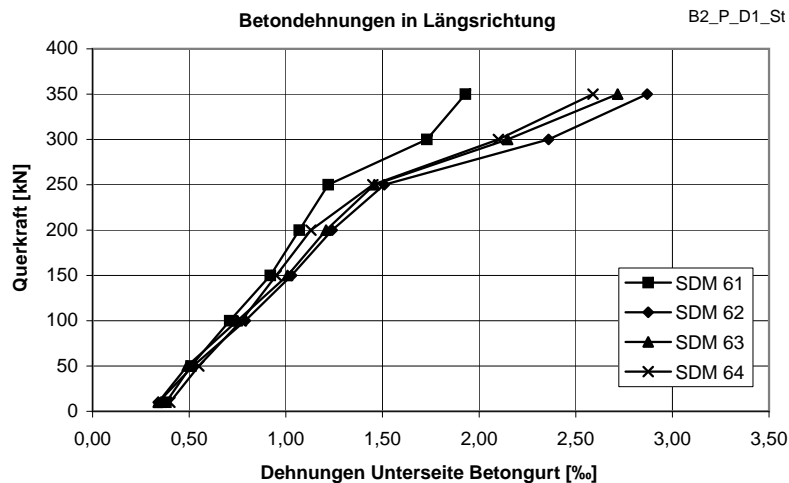
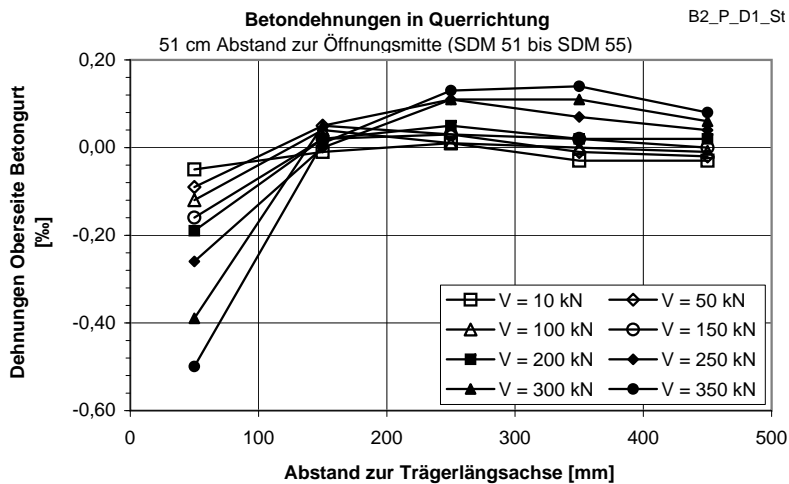
B.23.7. Betondehnungen

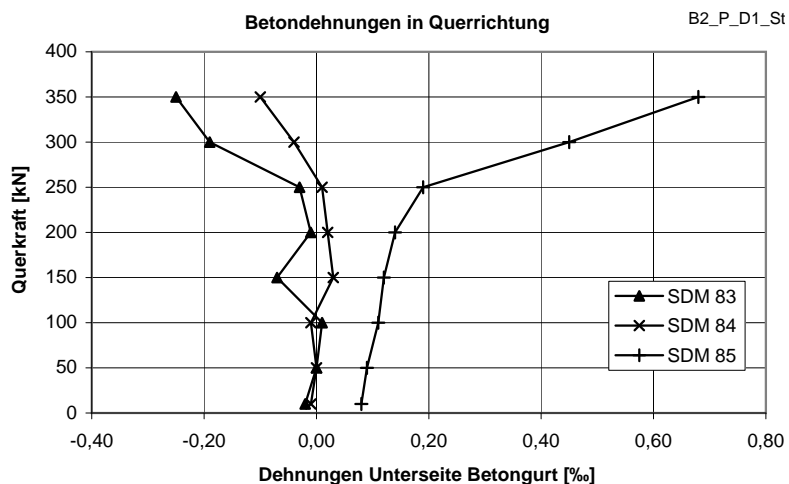
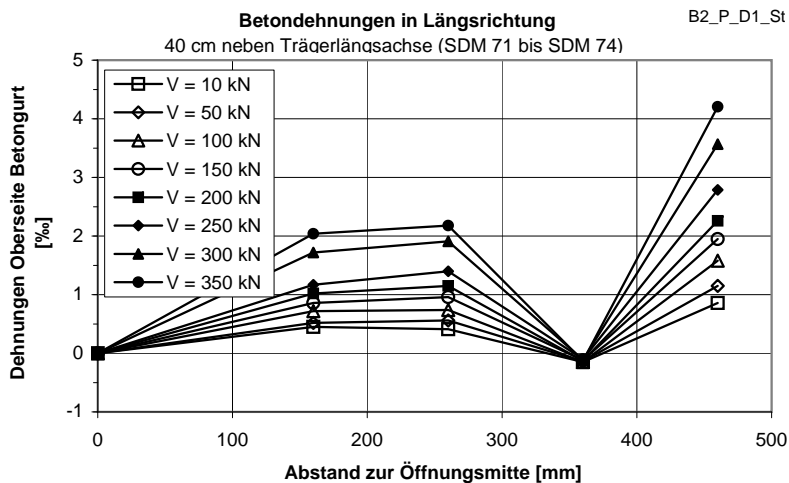
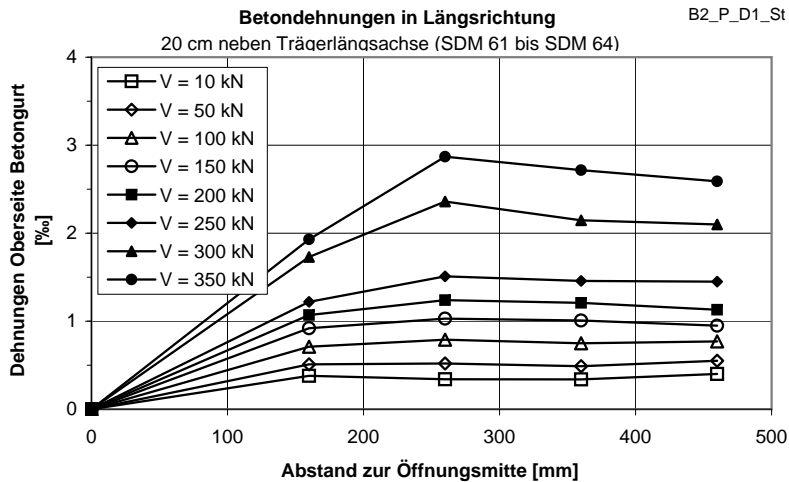


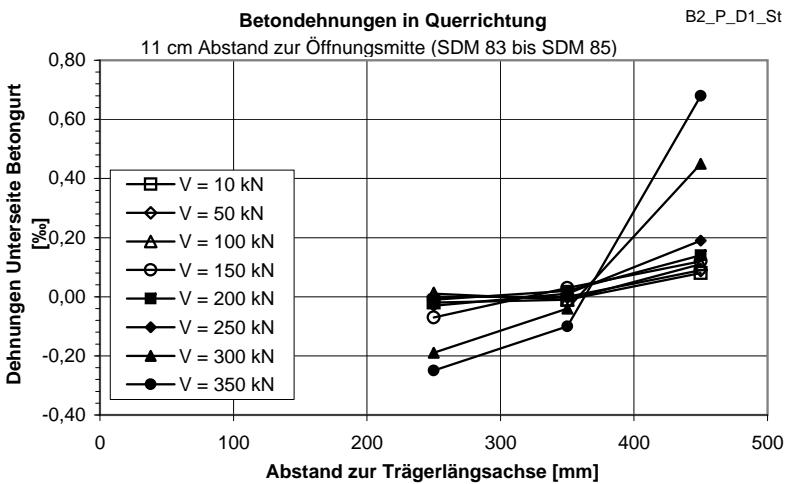
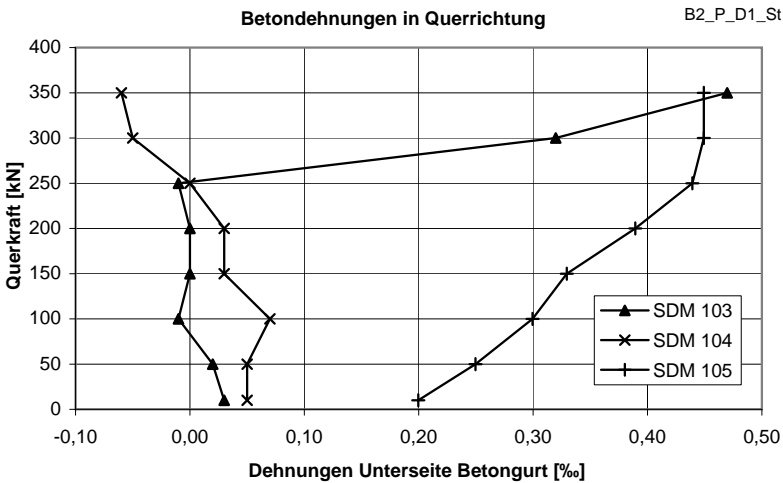
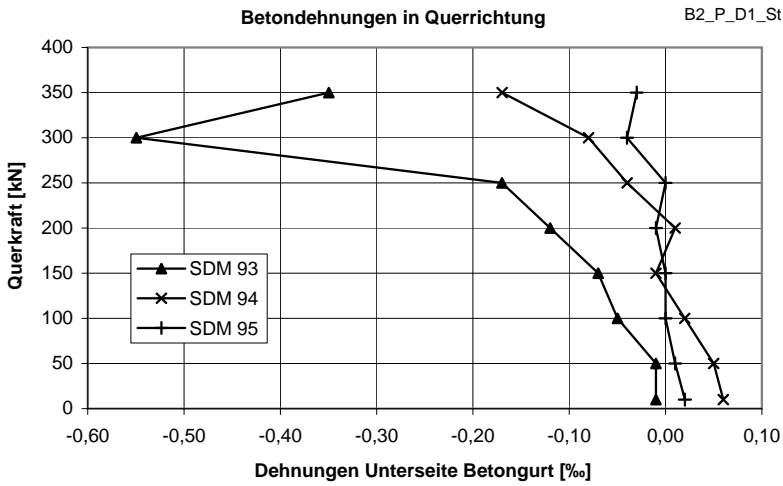


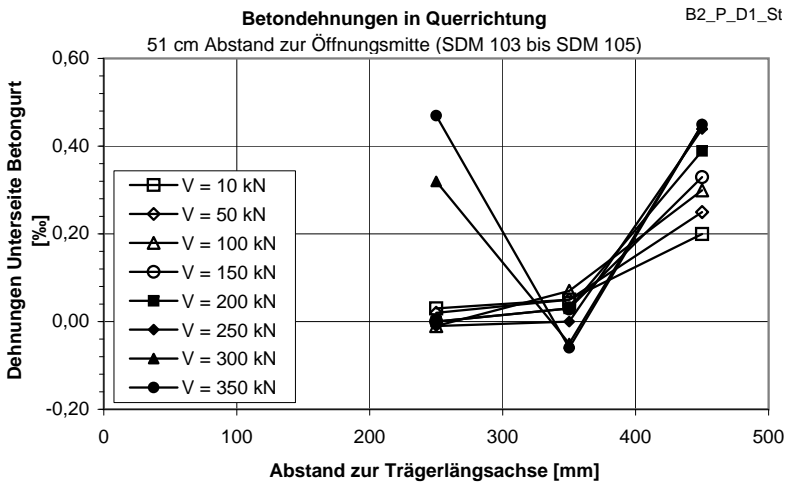
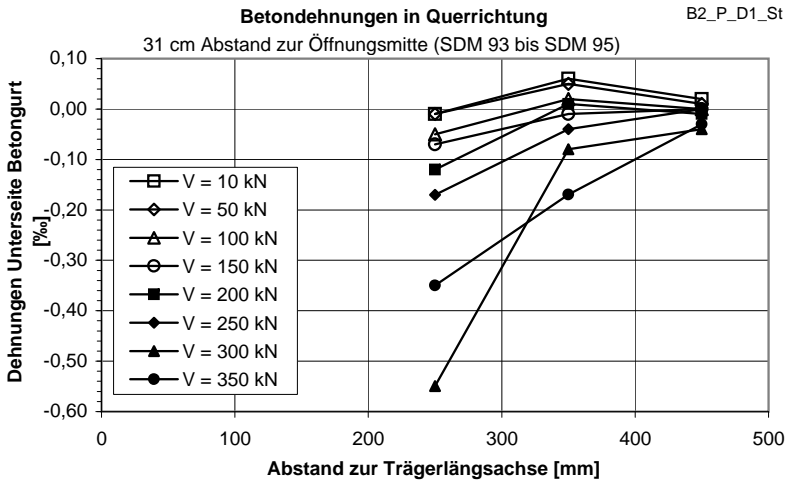






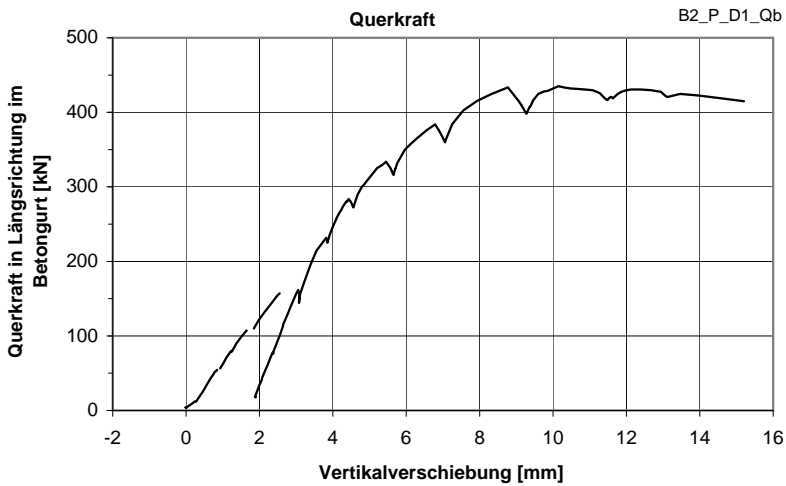
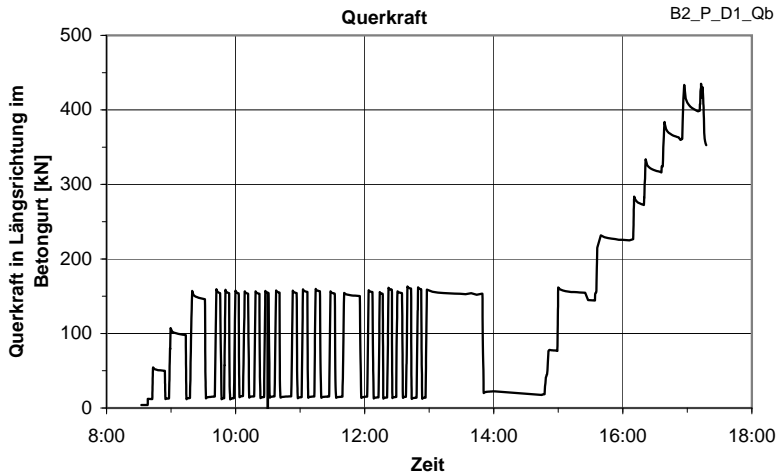


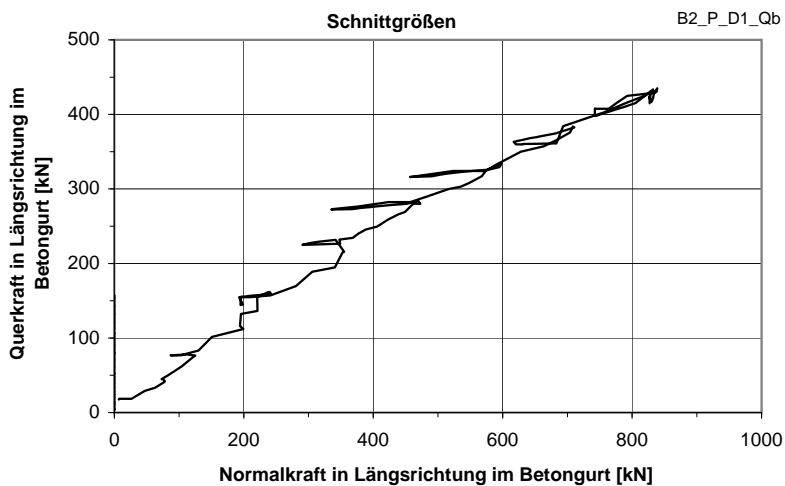
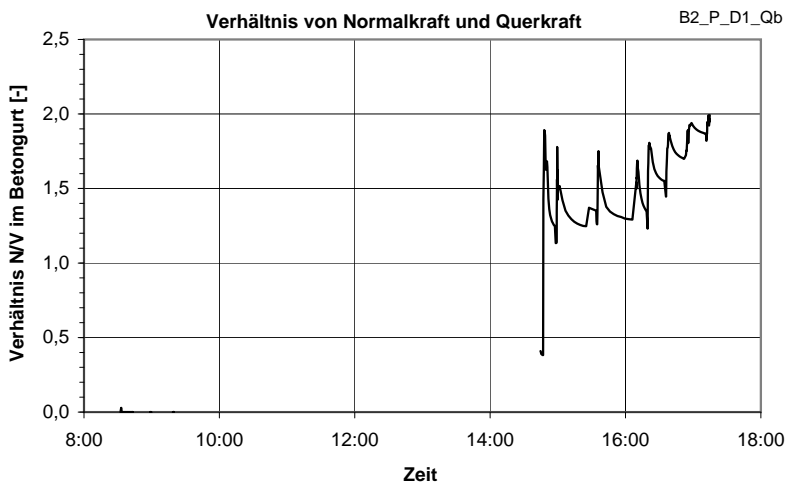
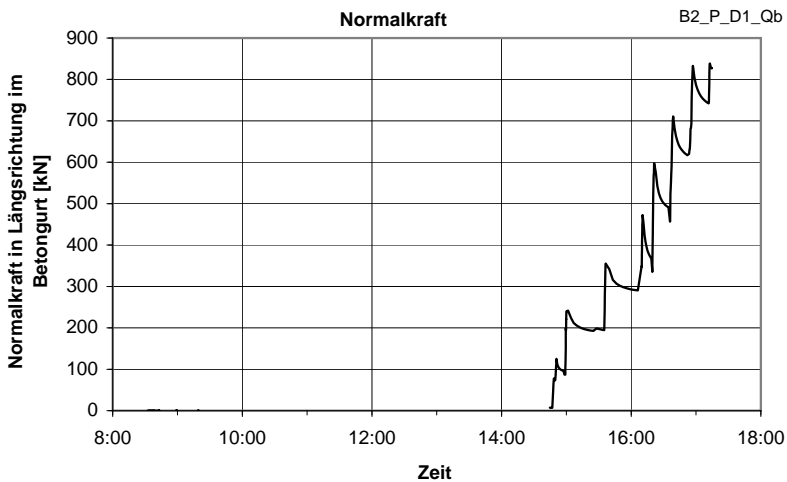


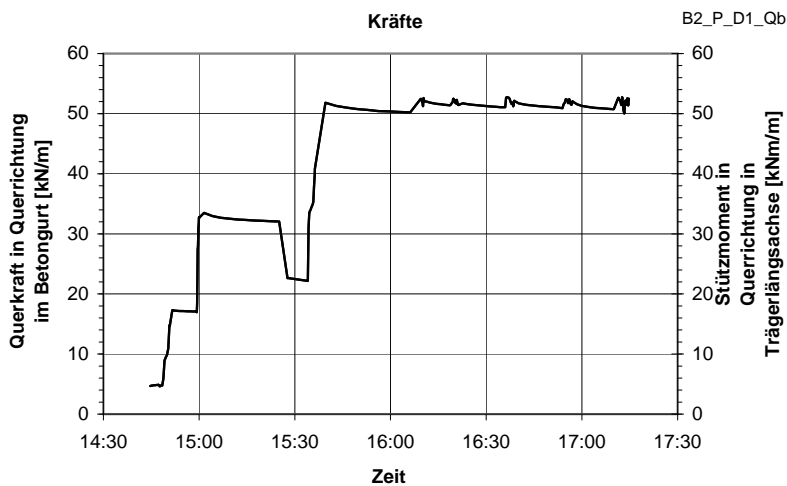
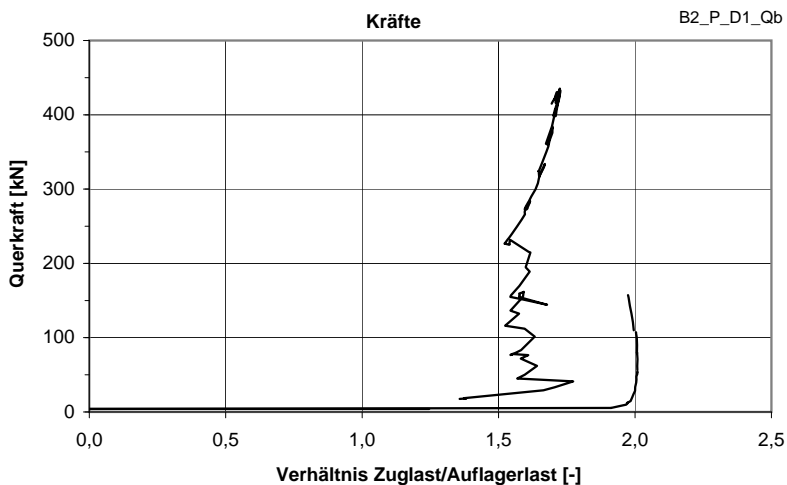
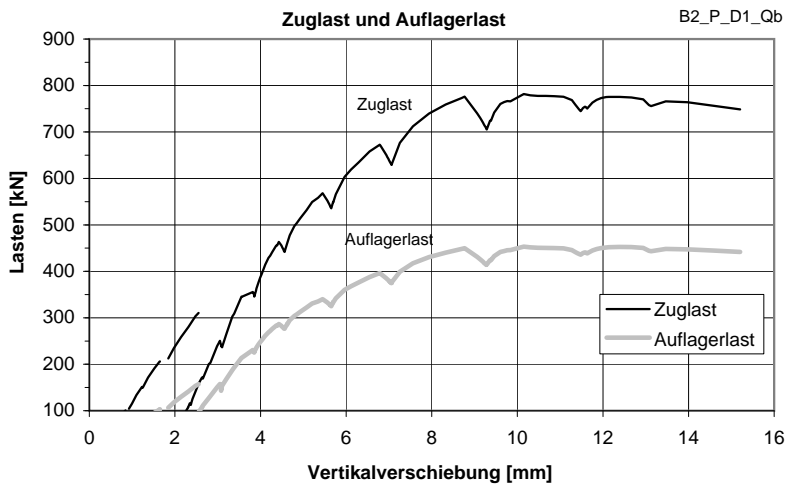


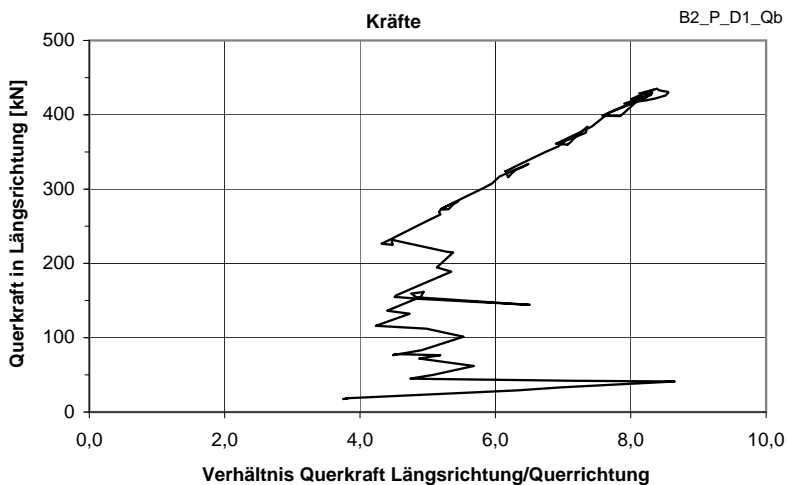
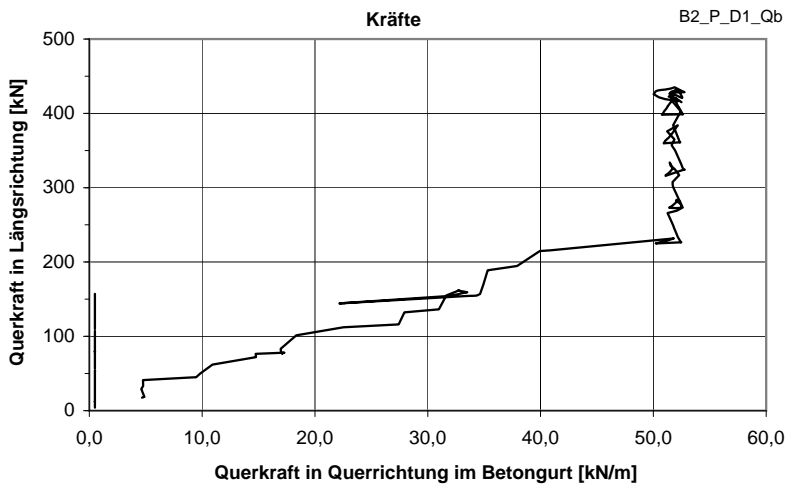
B.24. Versuch B2_P_D1_Qb

B.24.1. Kräfte

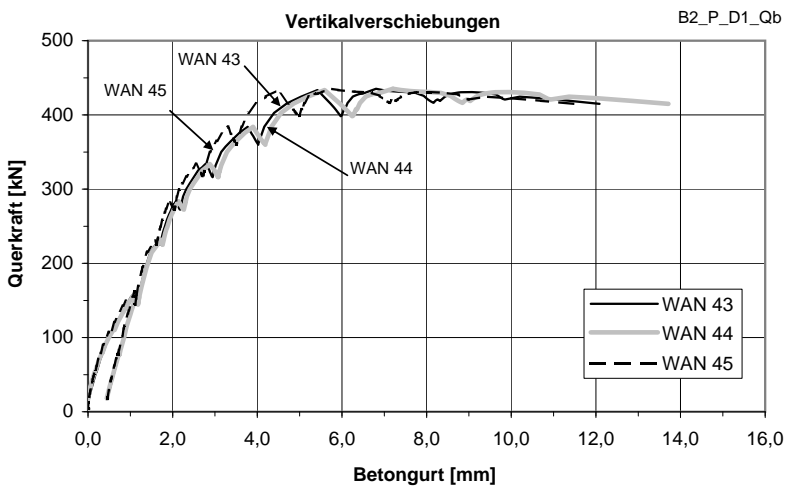
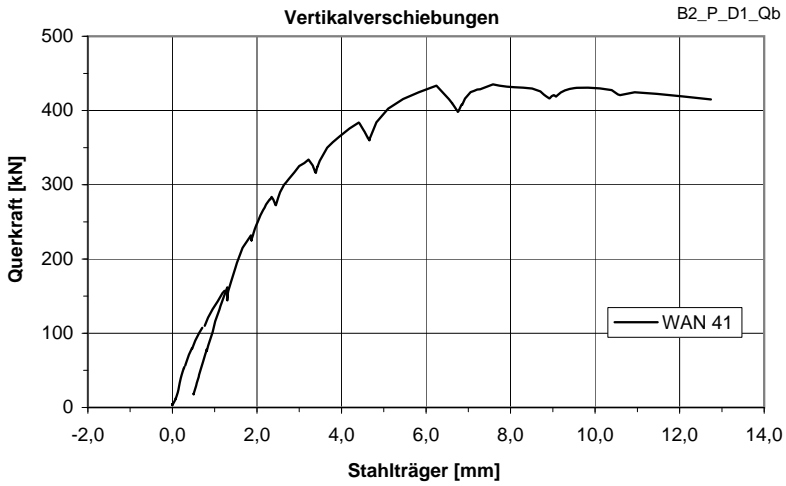


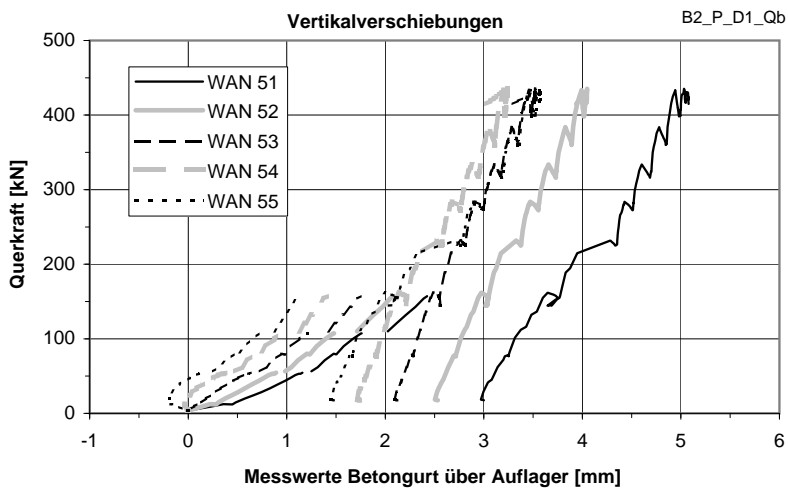
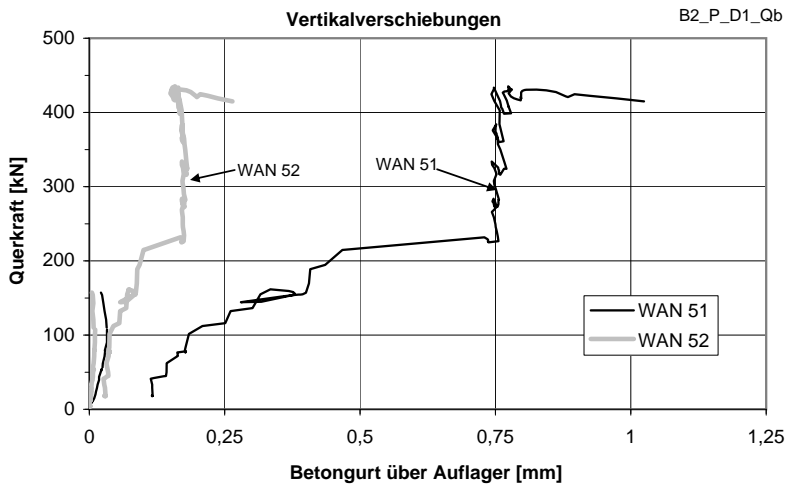
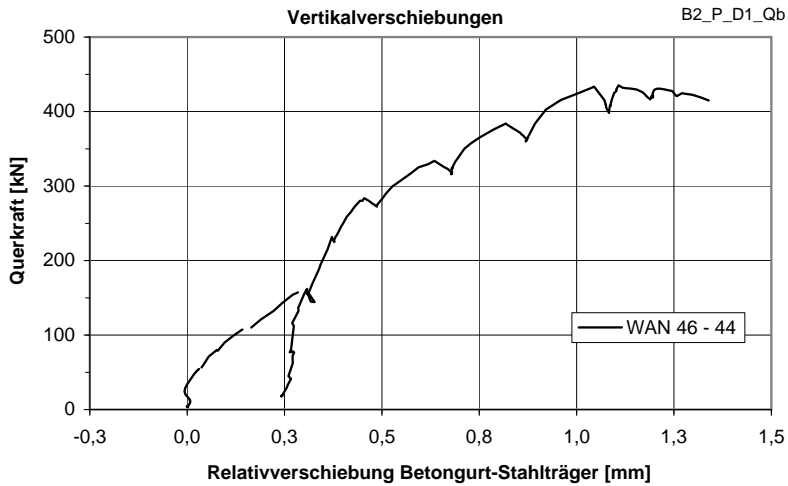




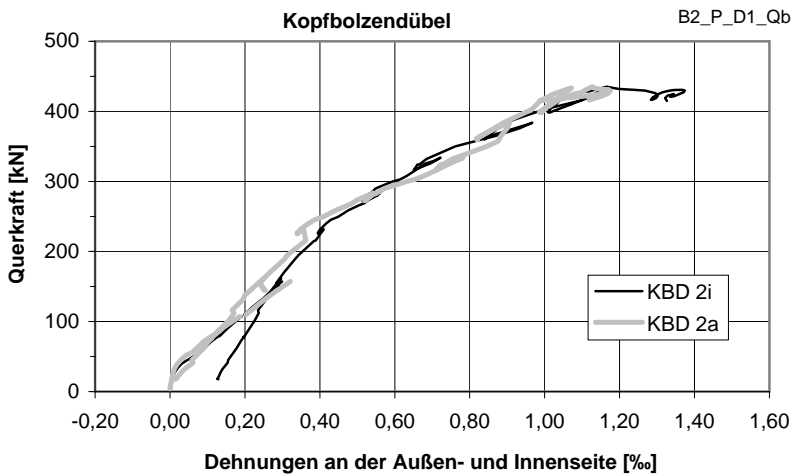
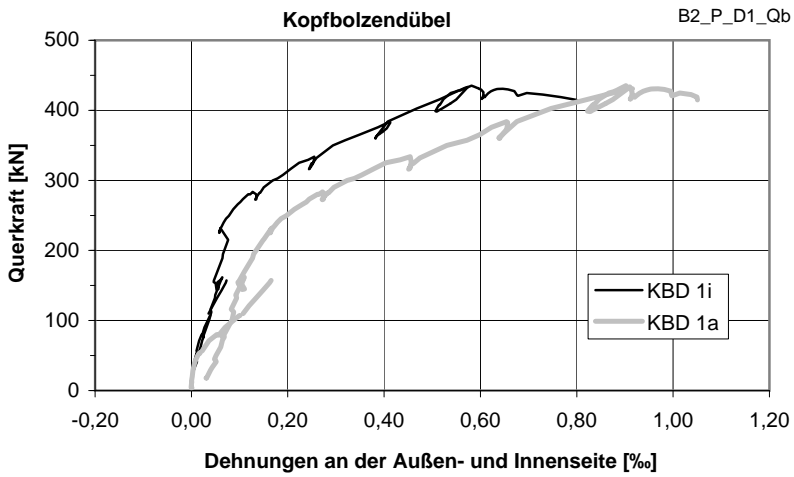


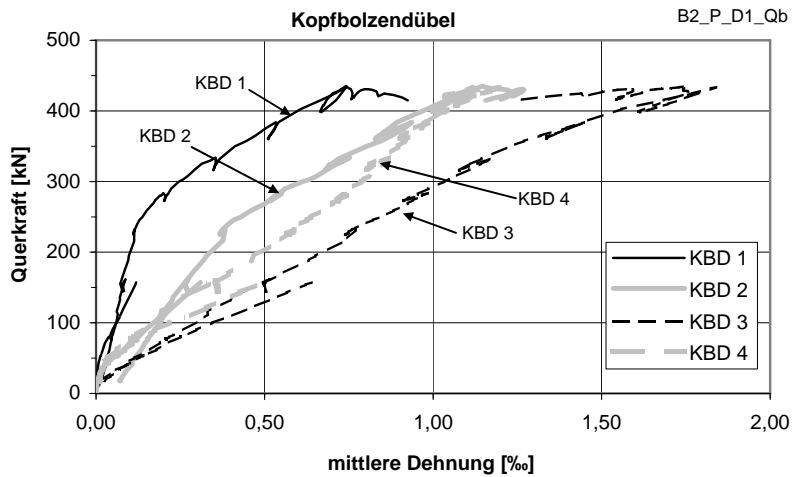
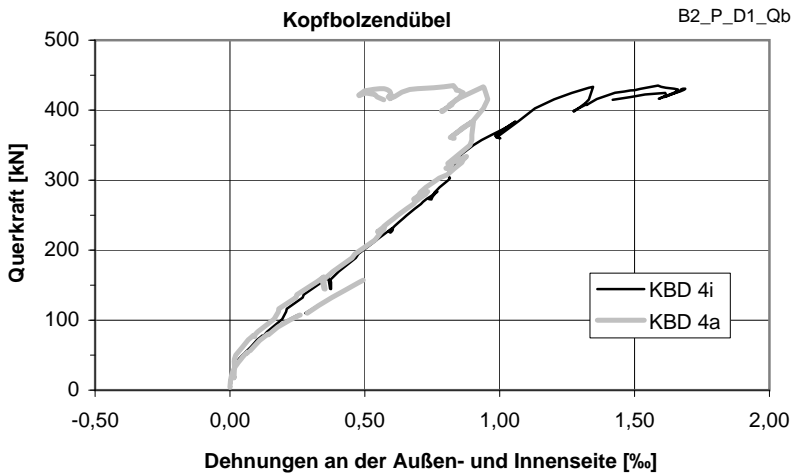
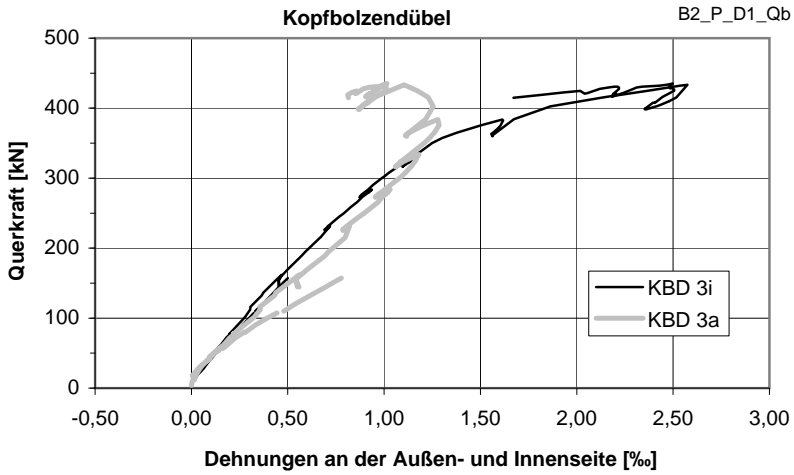
B.24.2. Verformungen

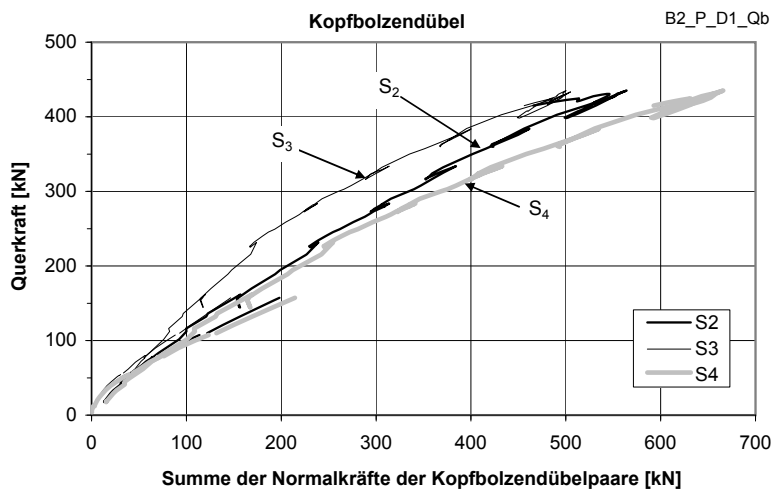
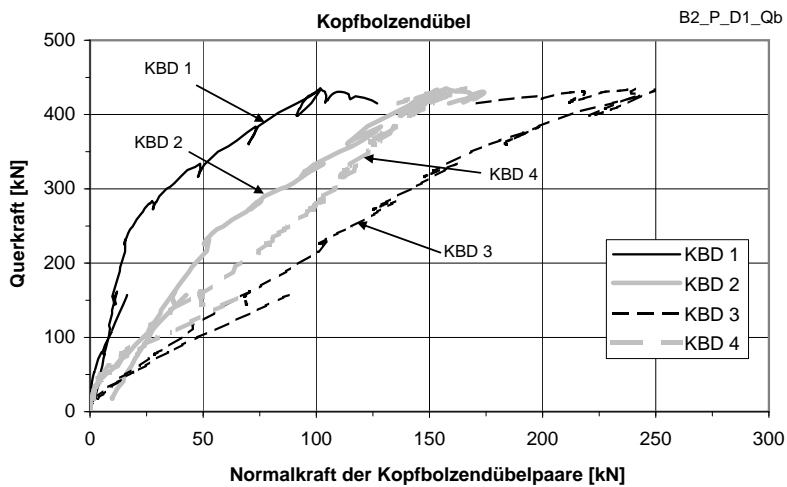
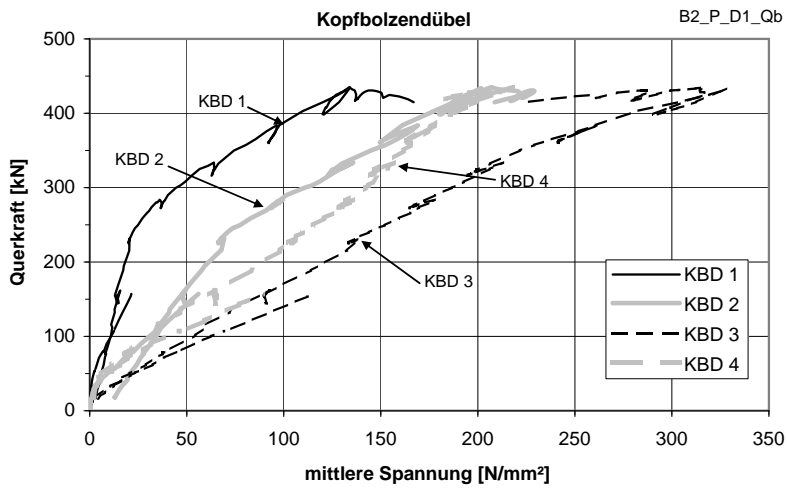




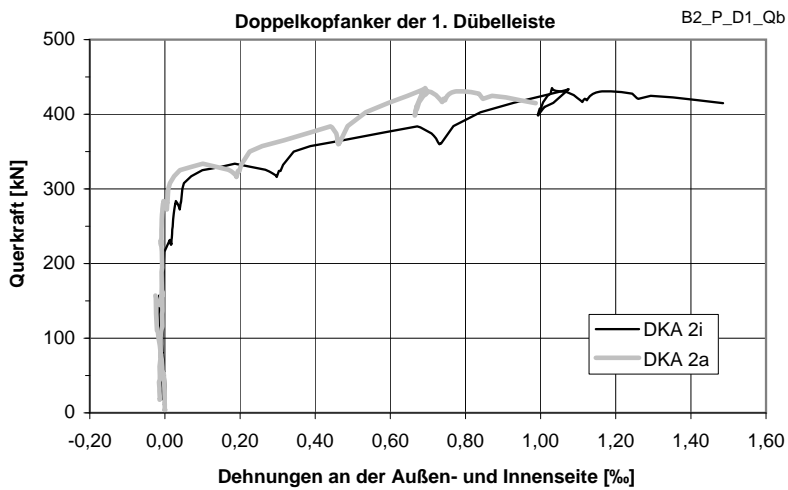
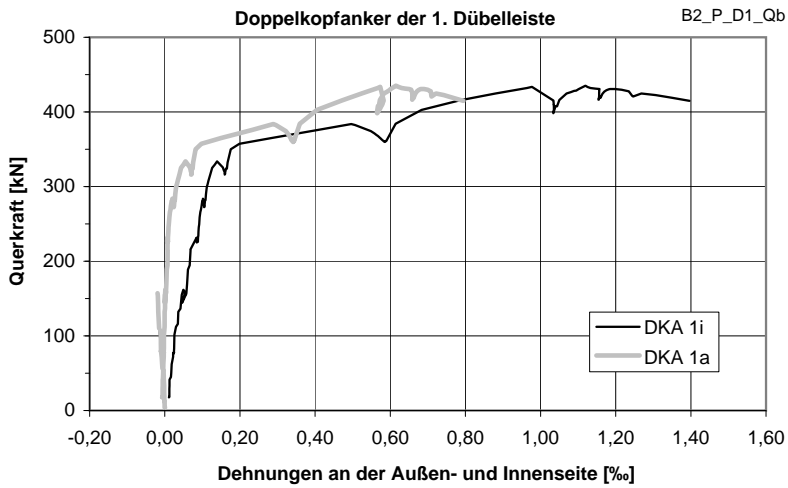
B.24.3. Kopfbolzendübel

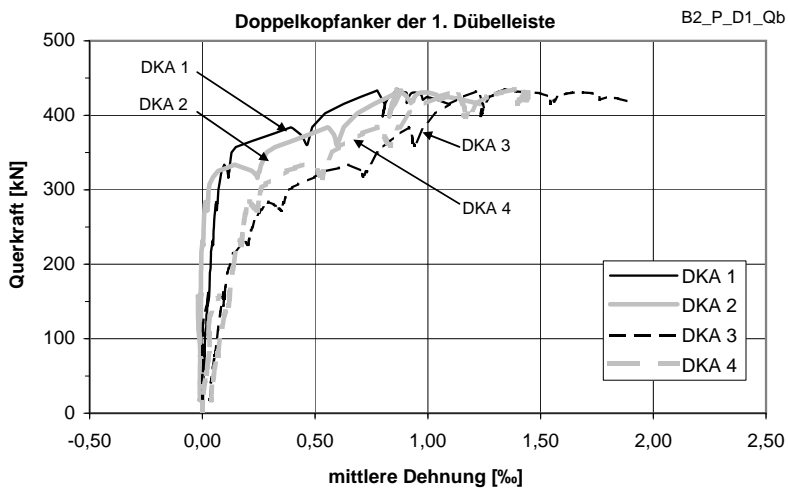
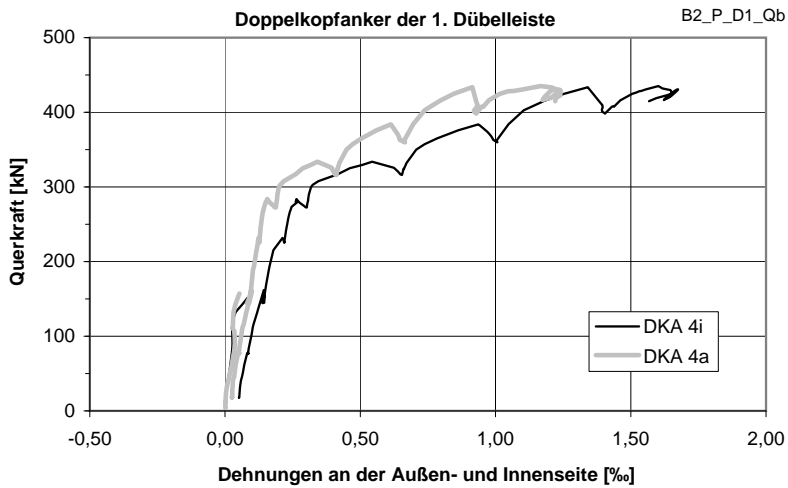
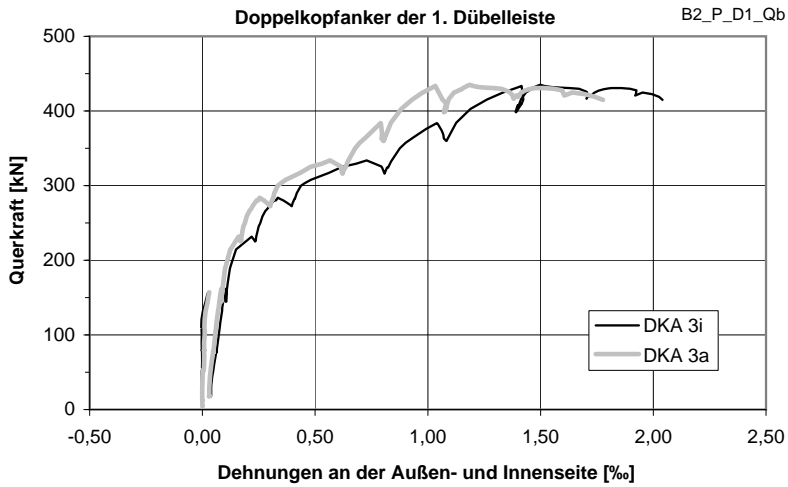


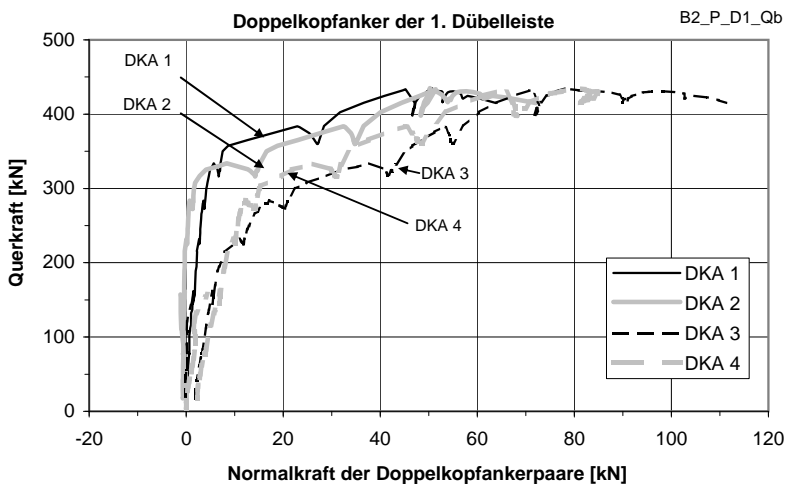
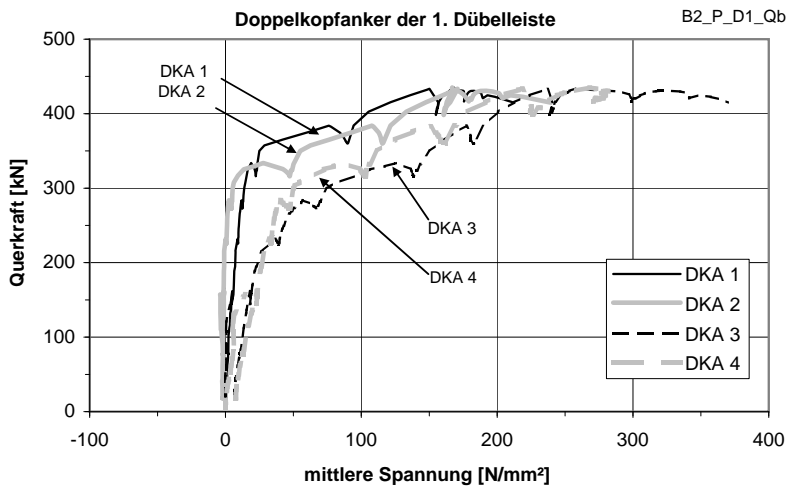




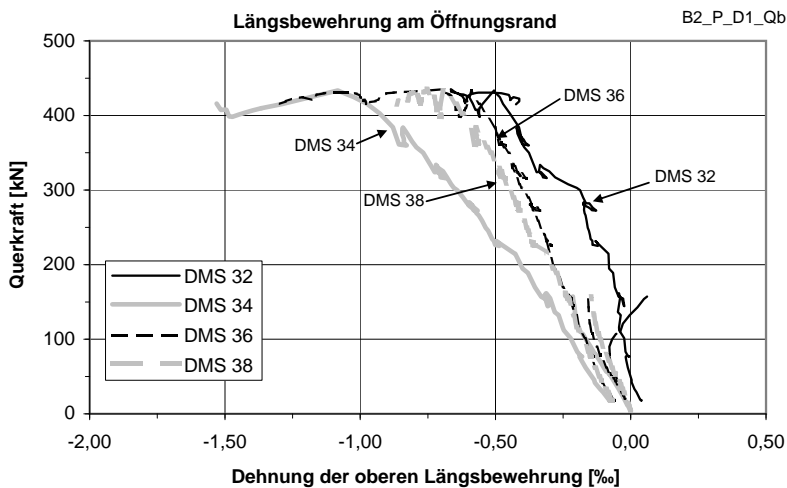
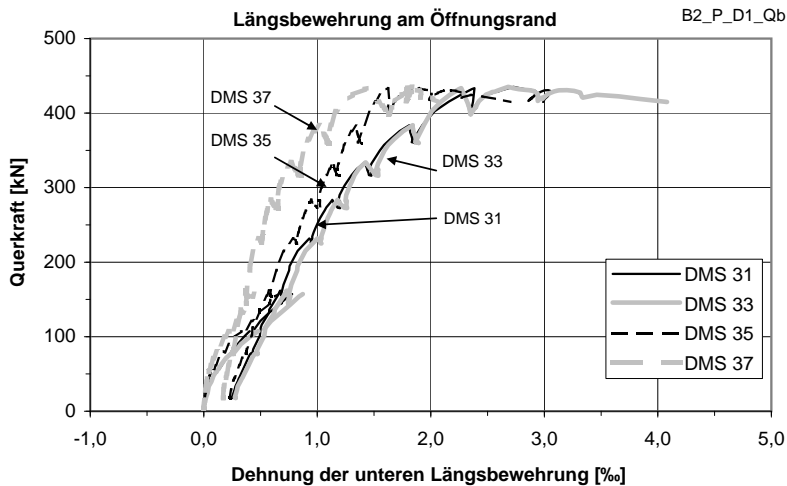
B.24.4. Doppelkopfkanker

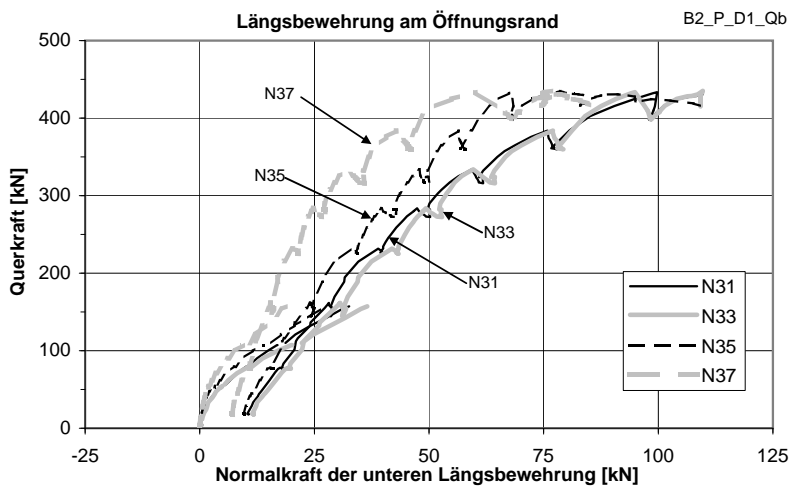
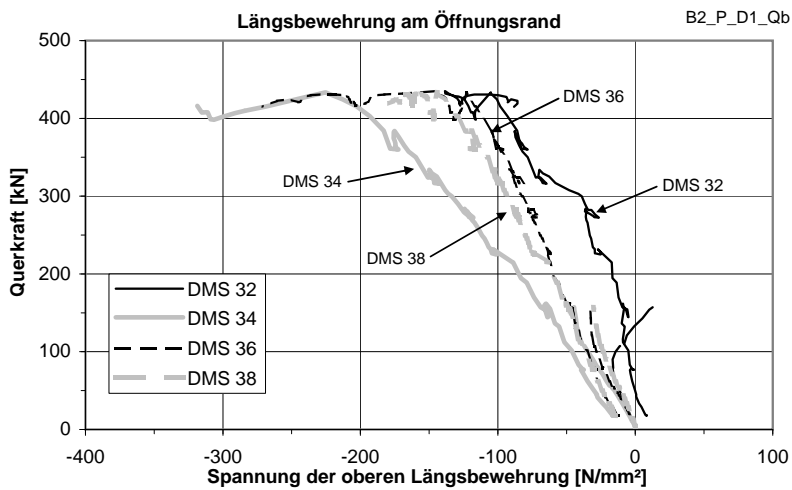
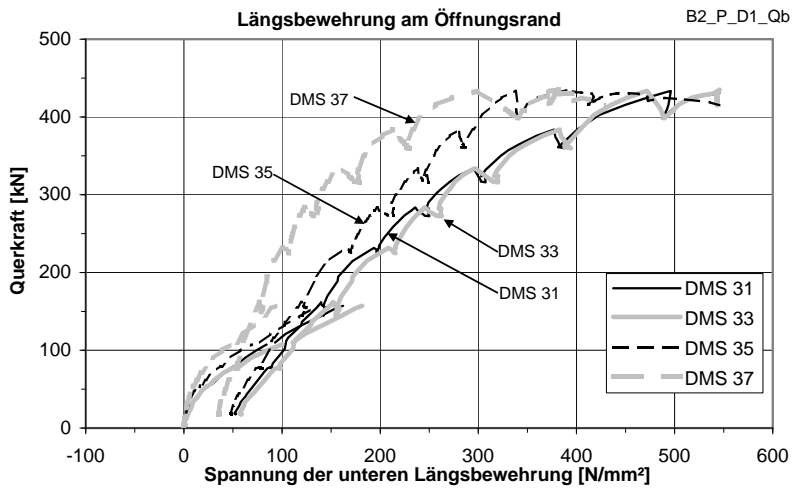


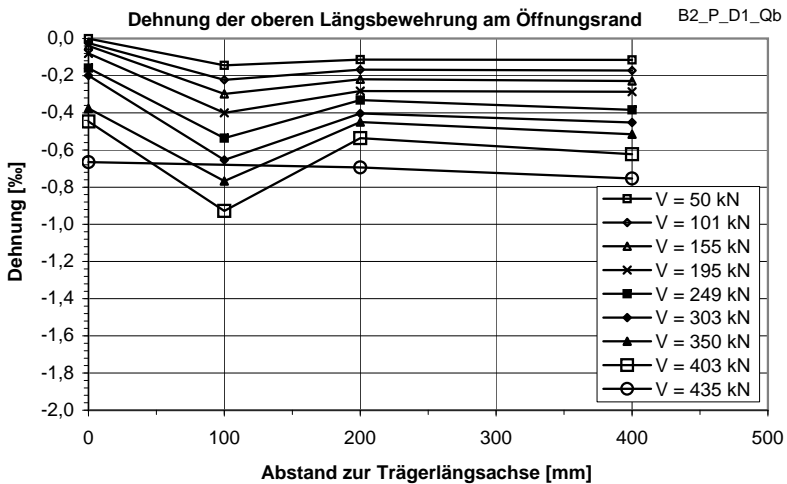
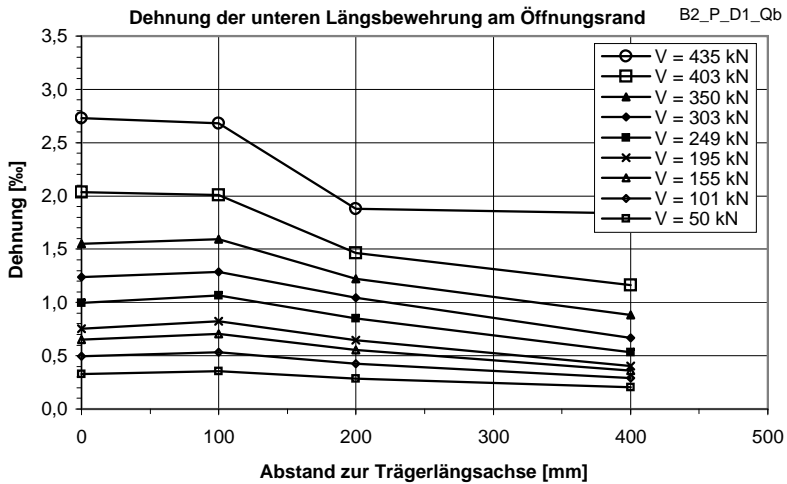
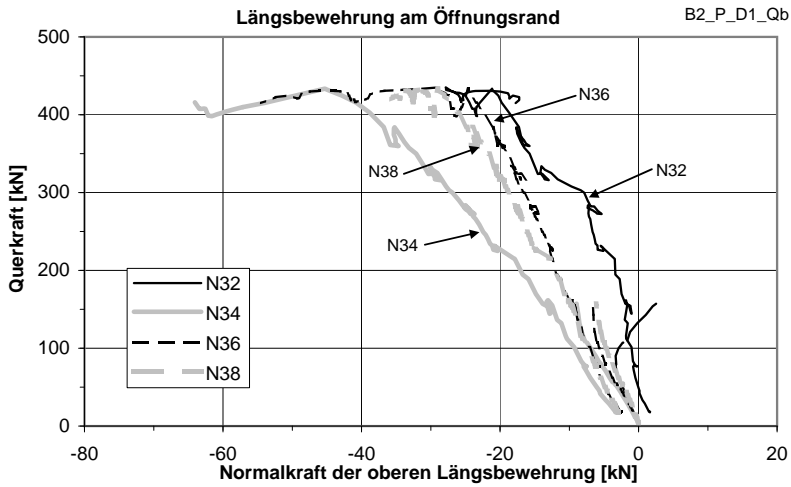


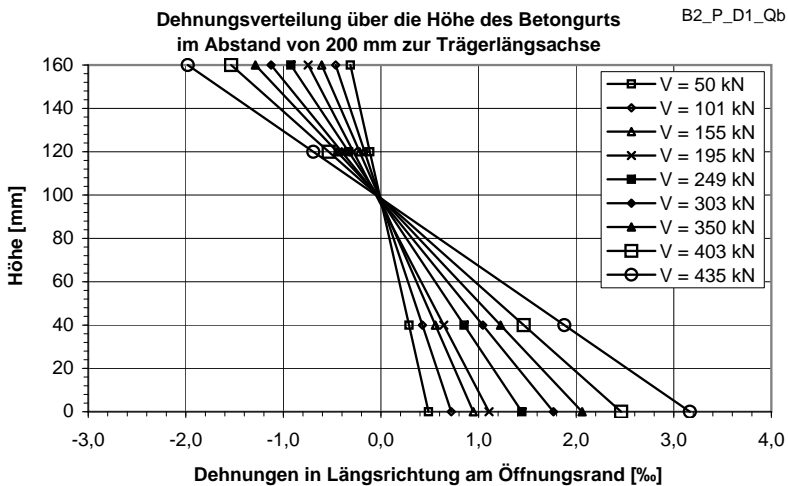
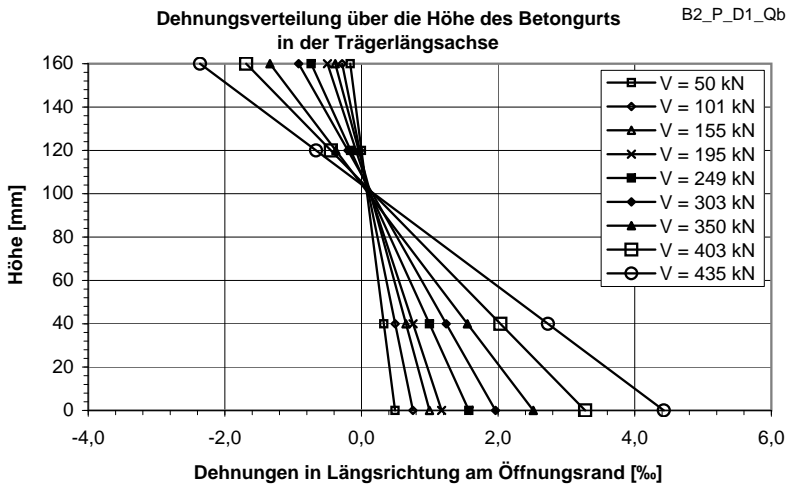


B.24.5. Längsbewehrung

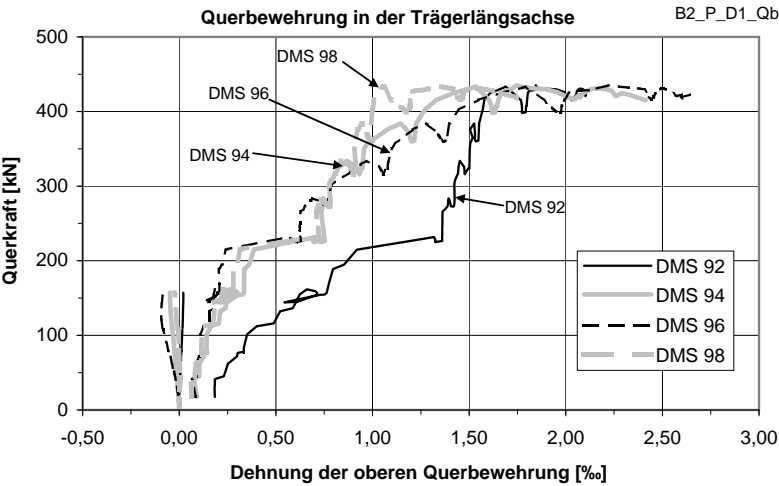
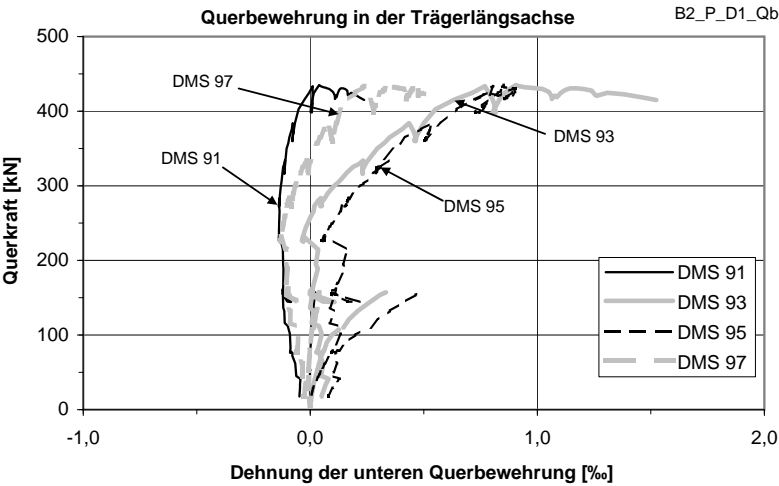


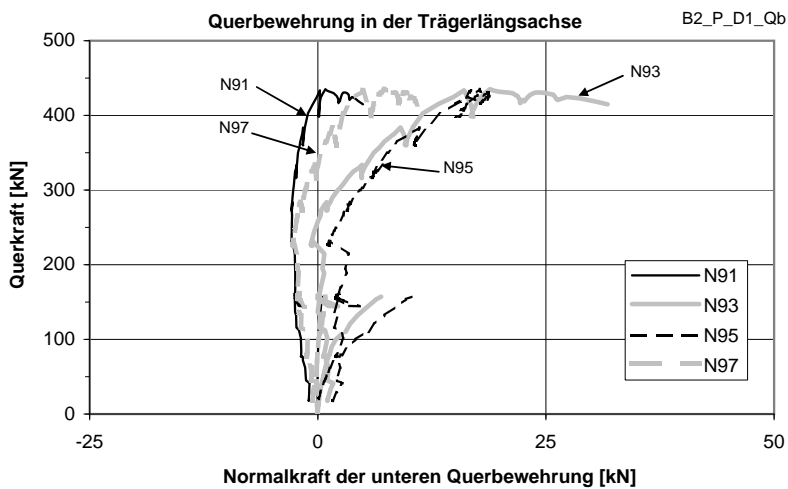
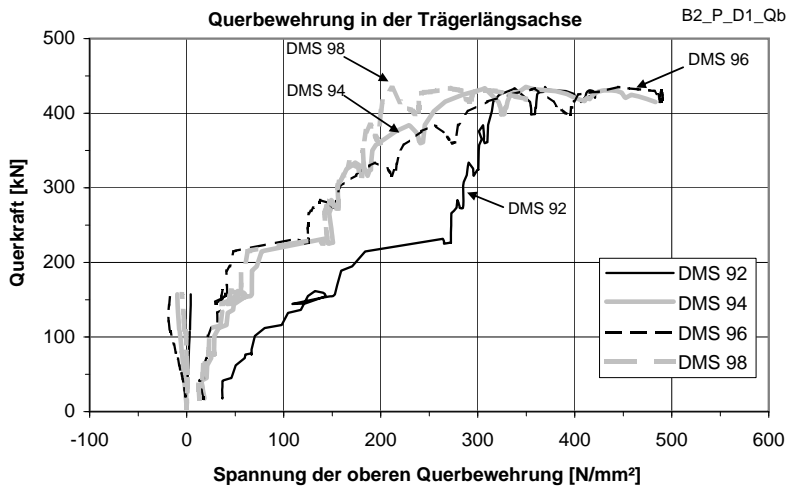
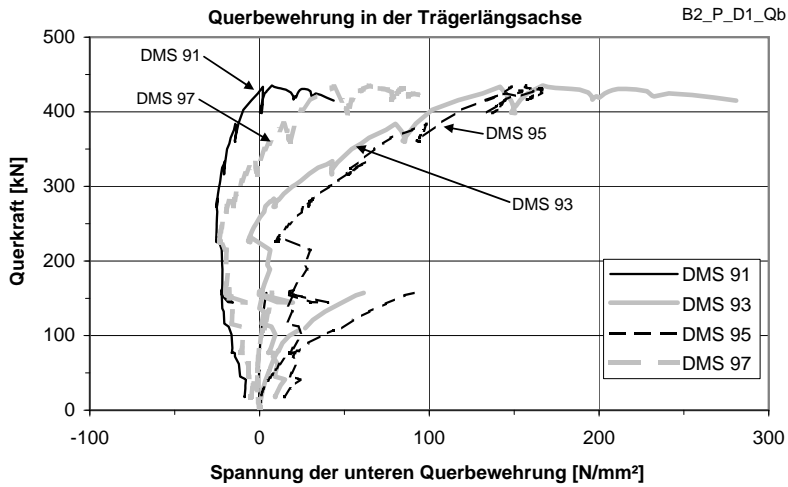


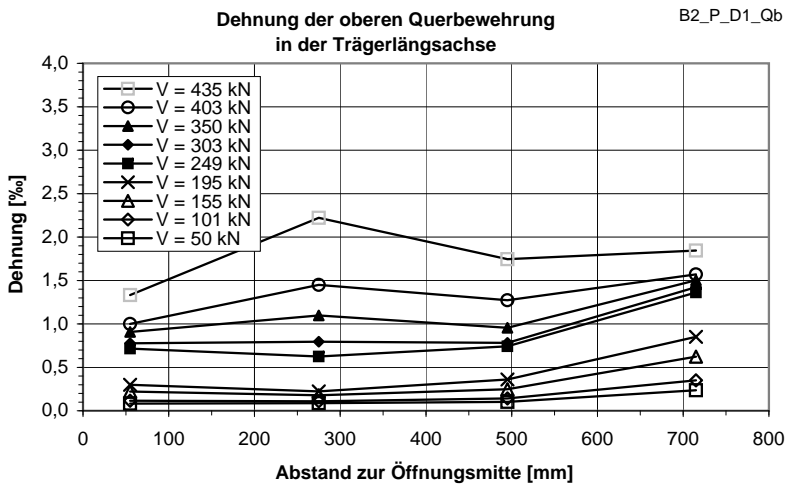
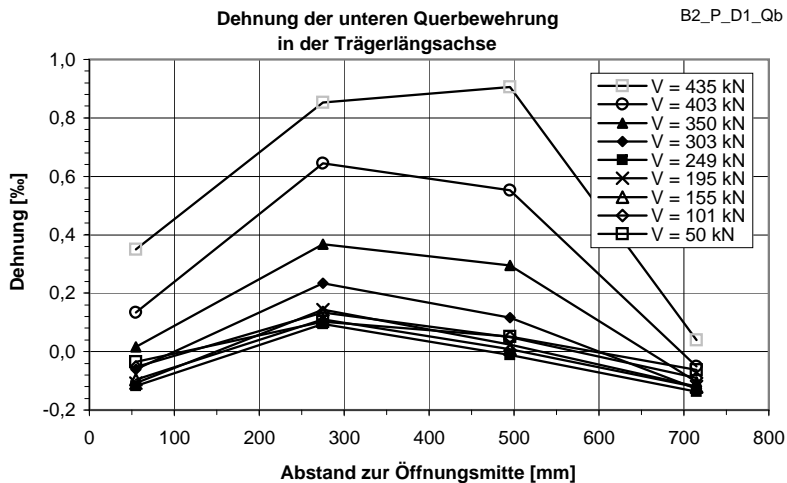
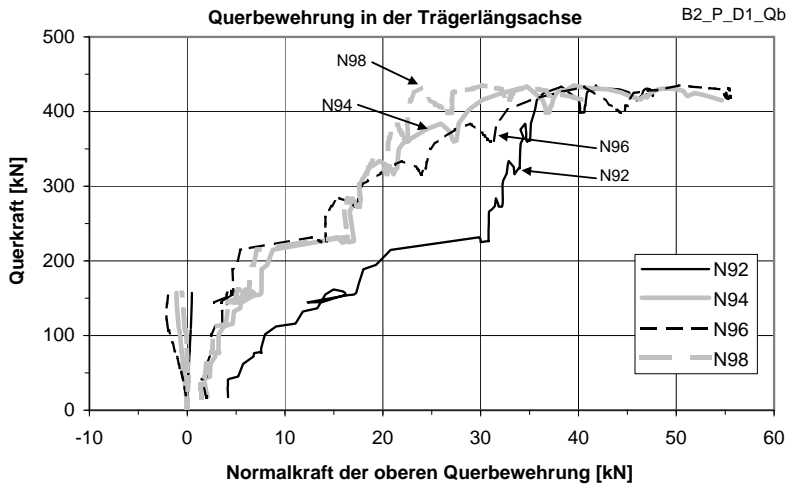


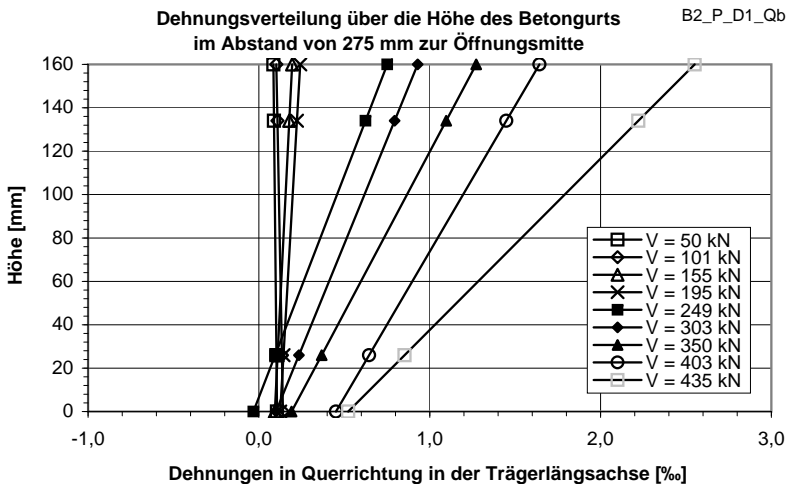
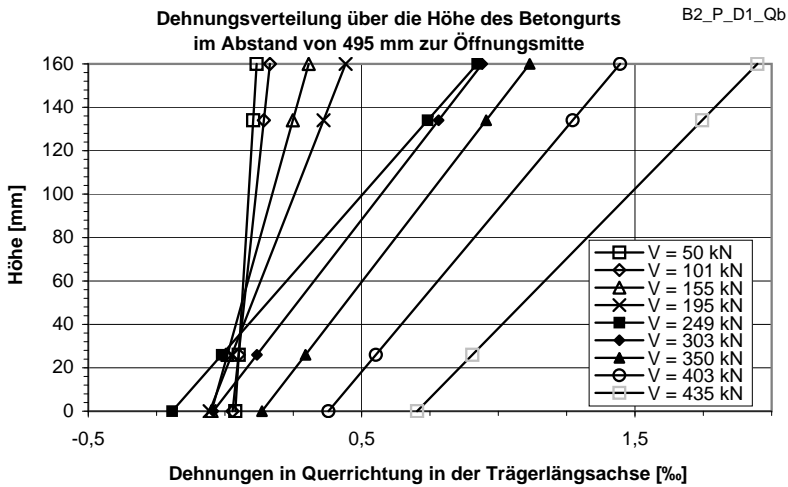
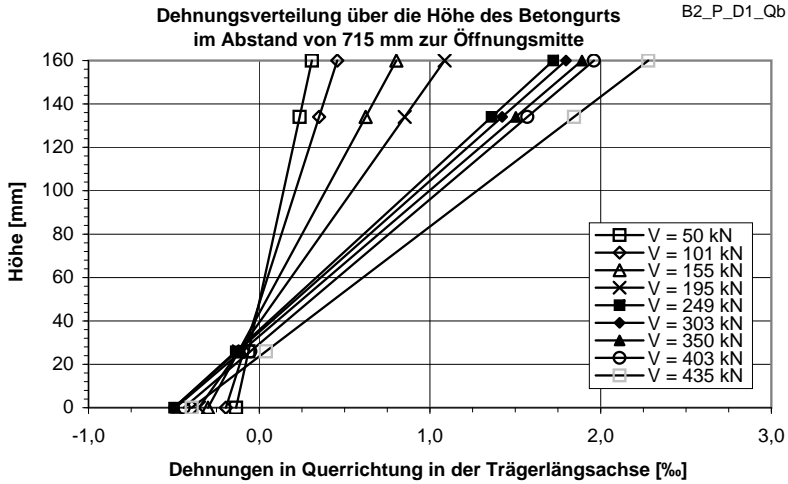


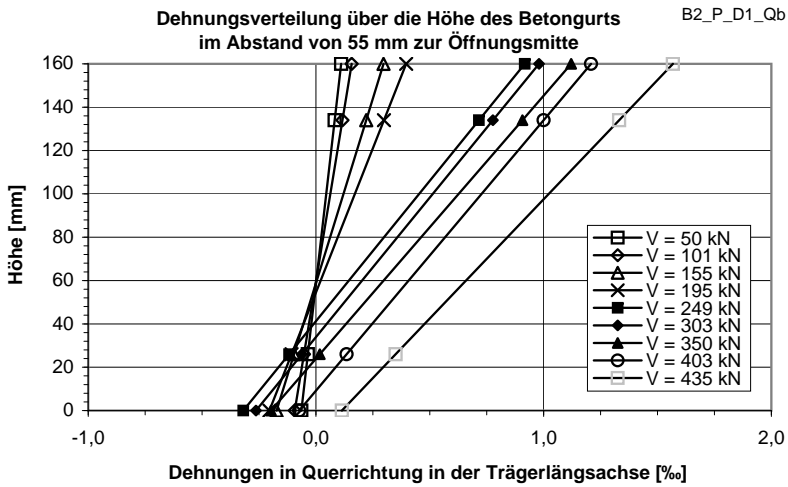
B.24.6. Querbewehrung



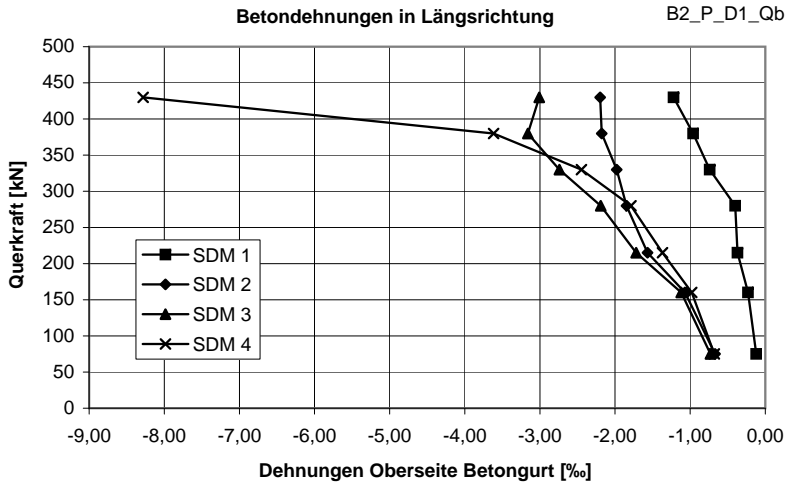


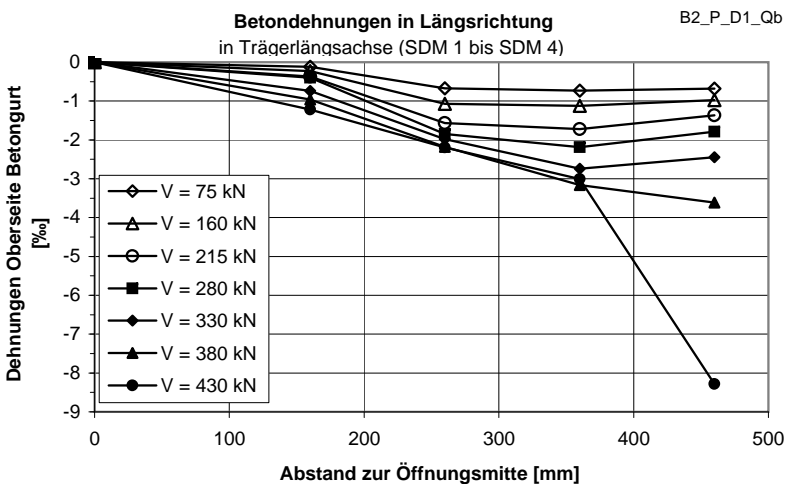
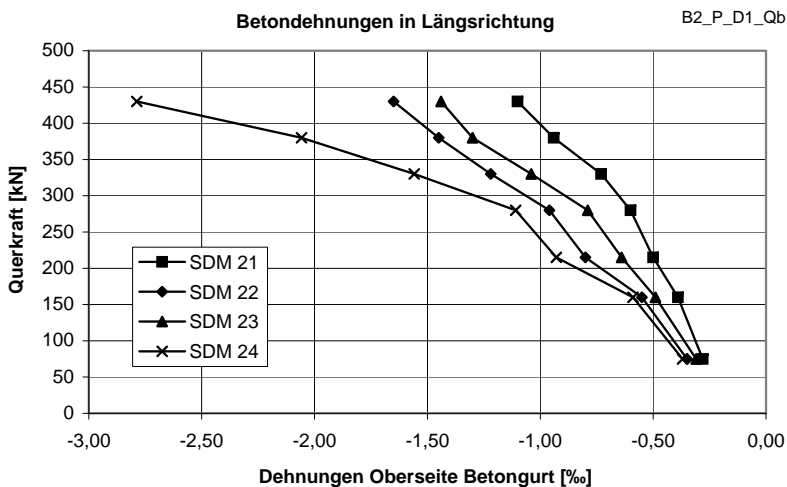
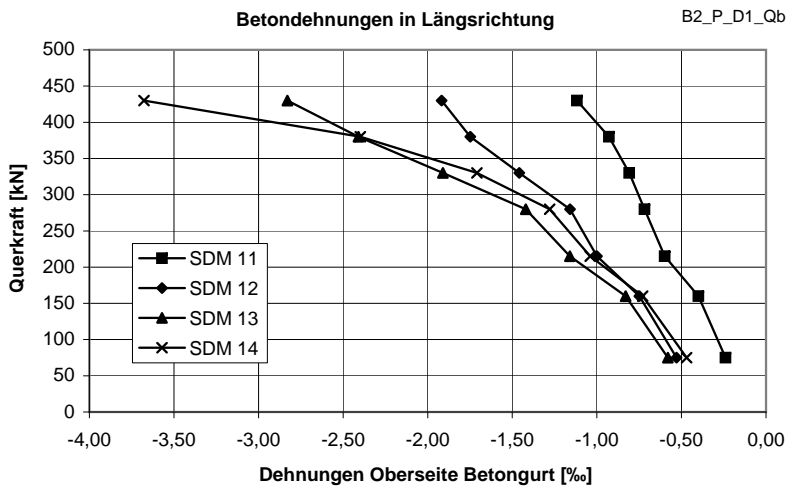


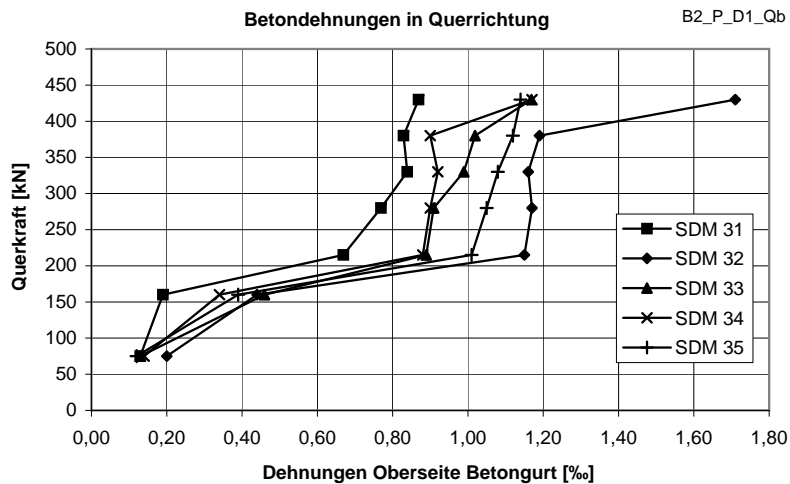
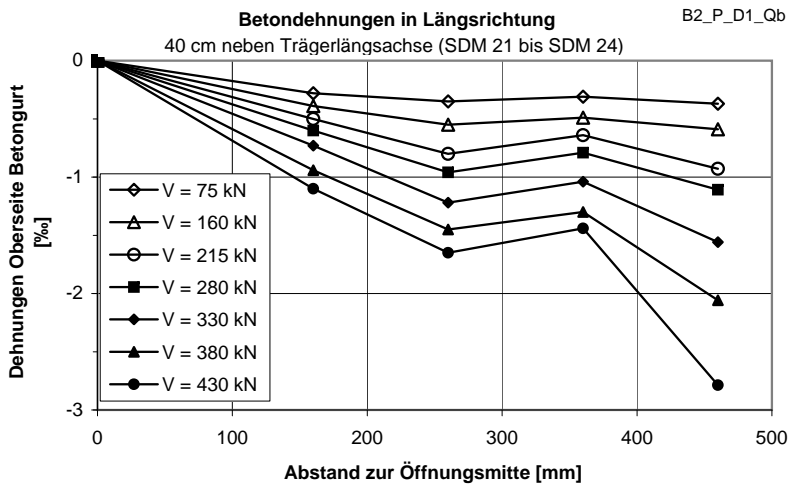
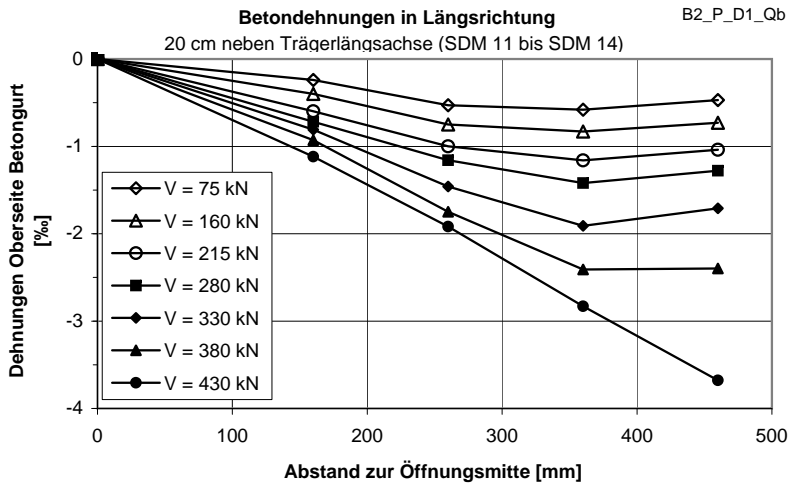


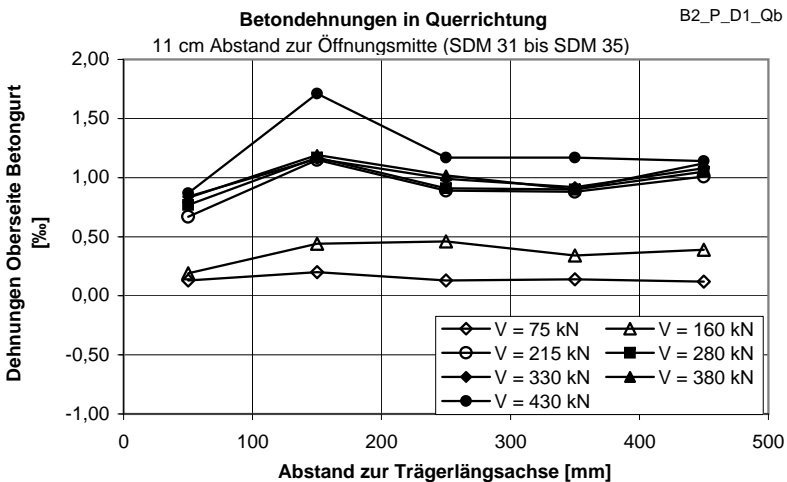
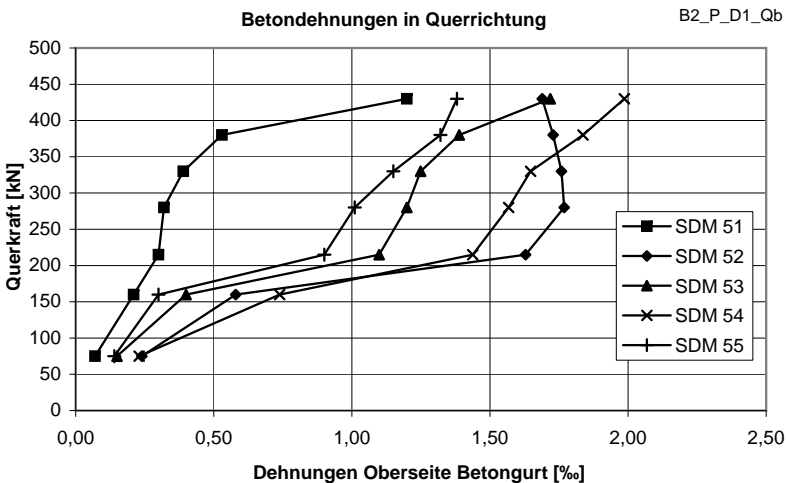
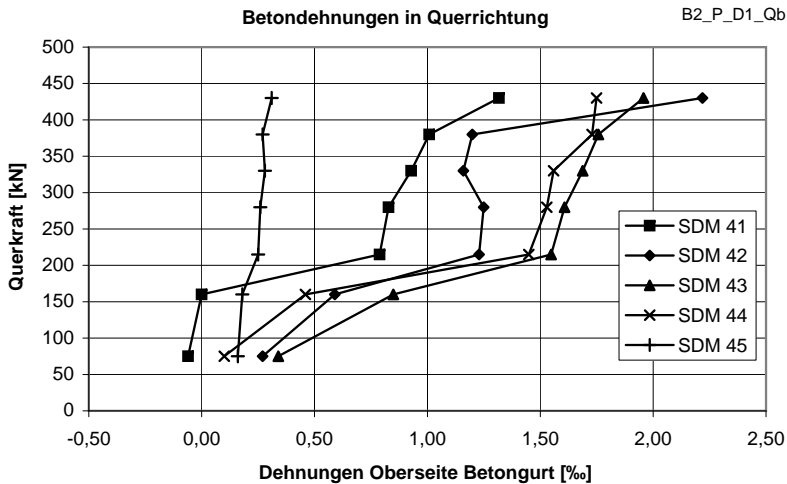


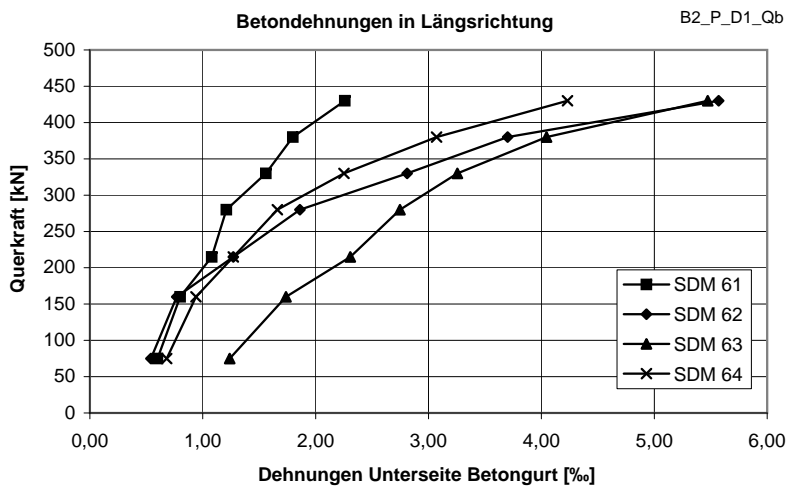
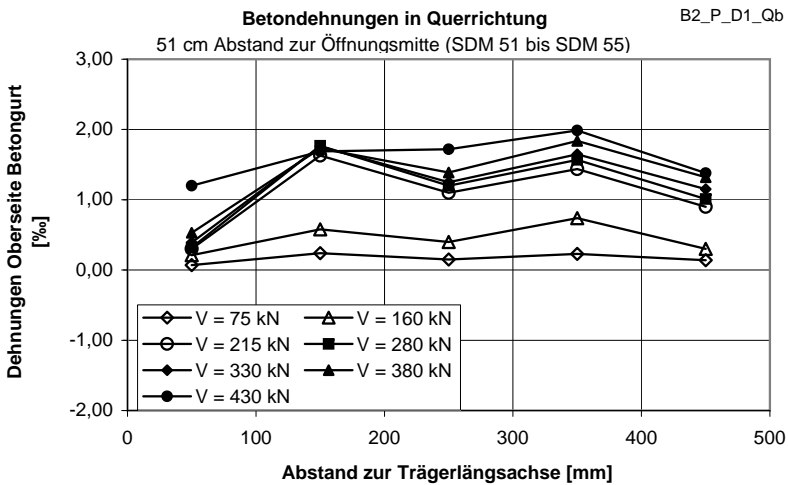
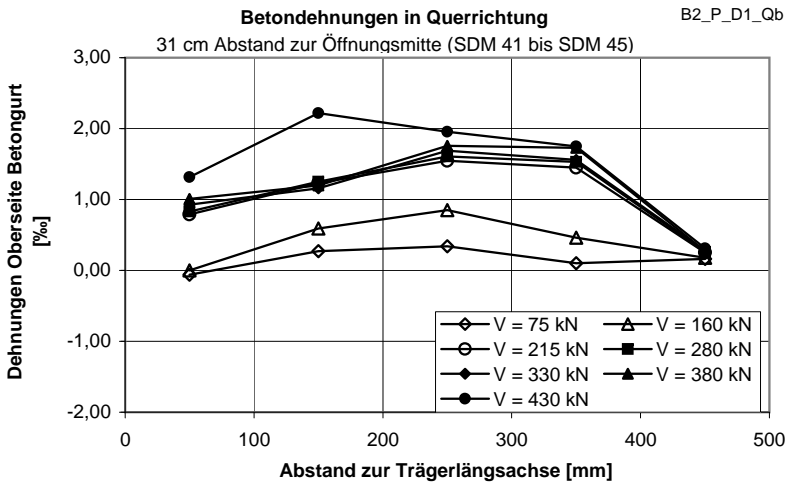
B.24.7. Betondehnungen

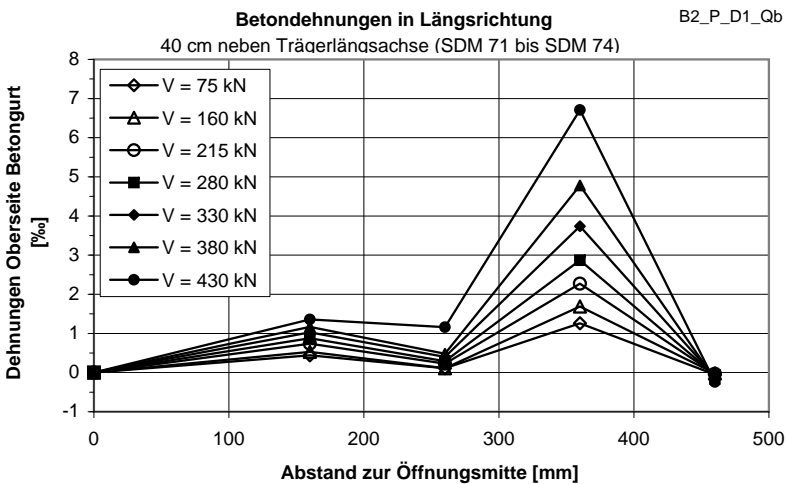
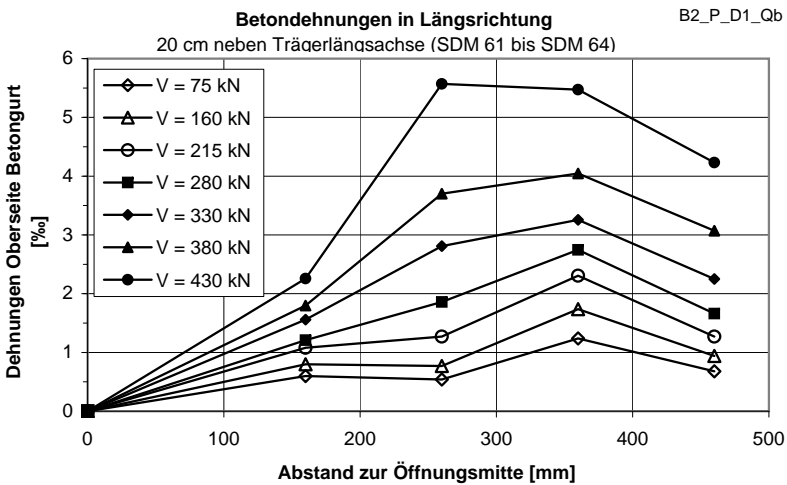
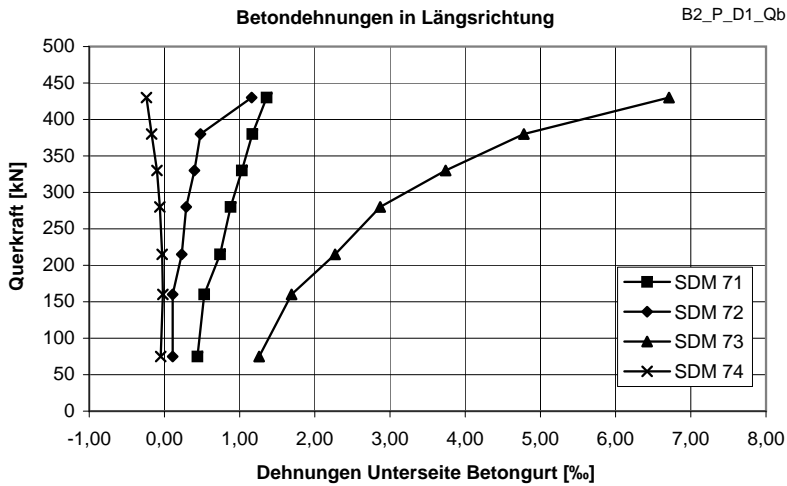


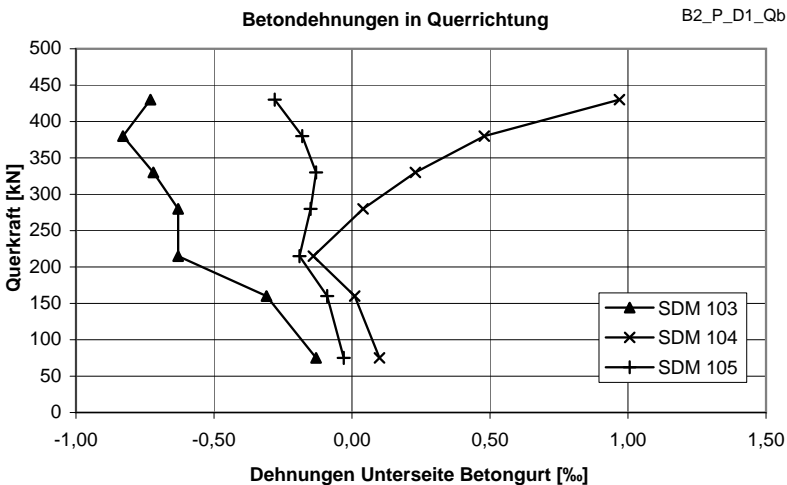
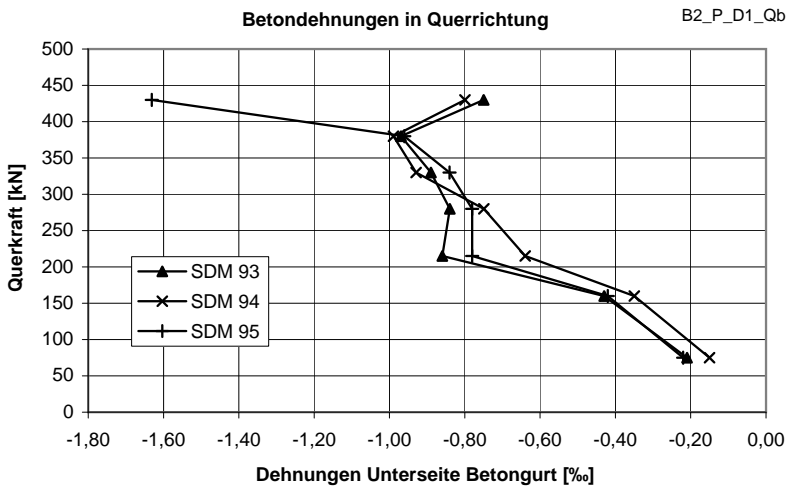
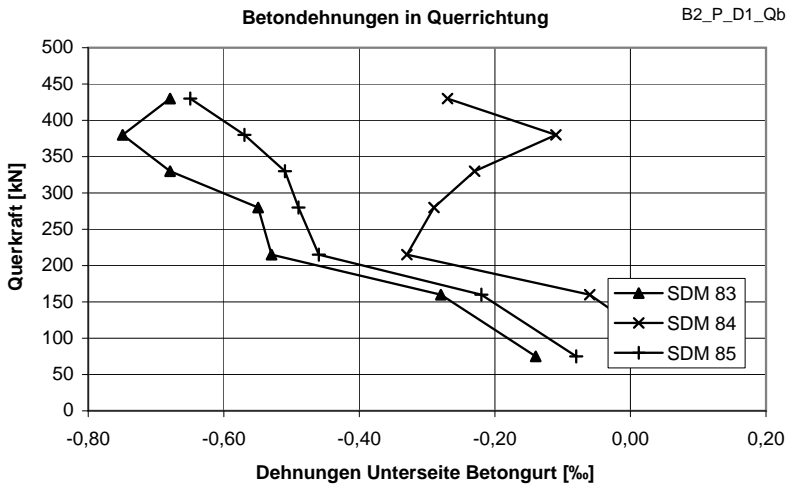


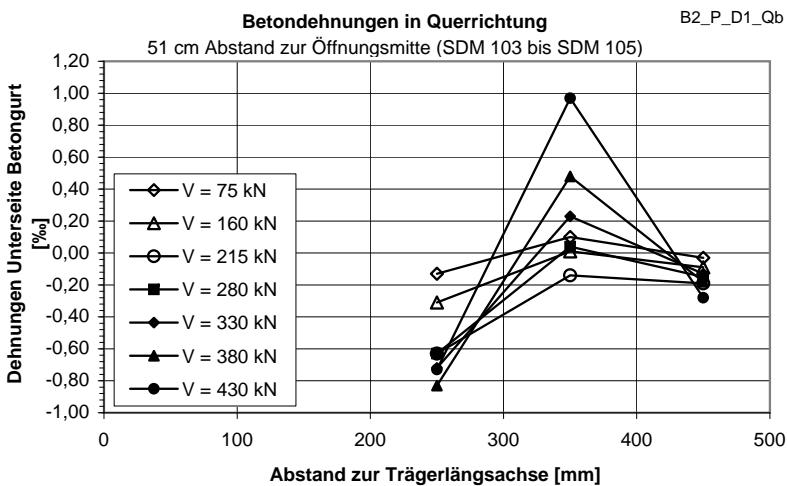
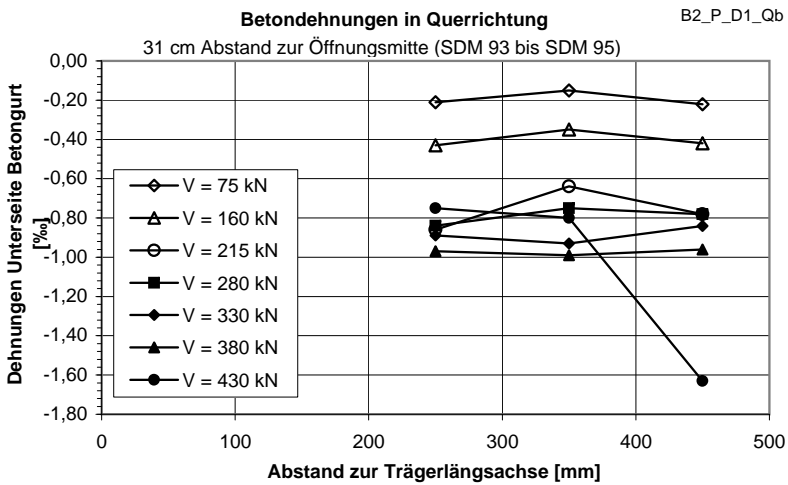
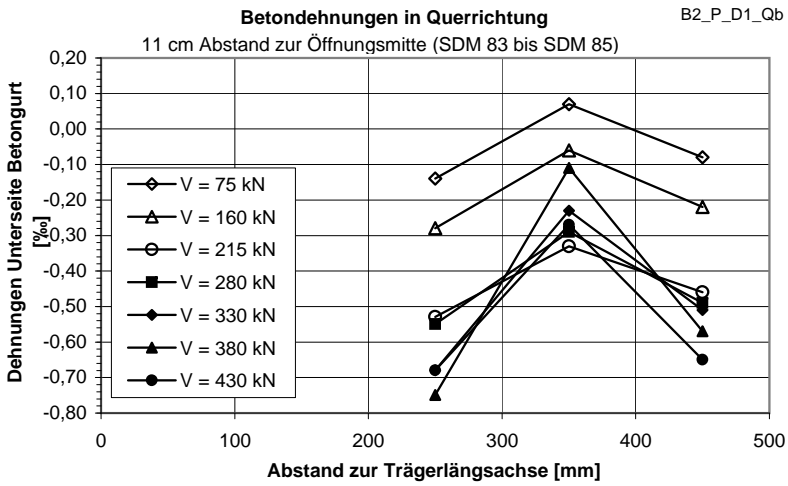






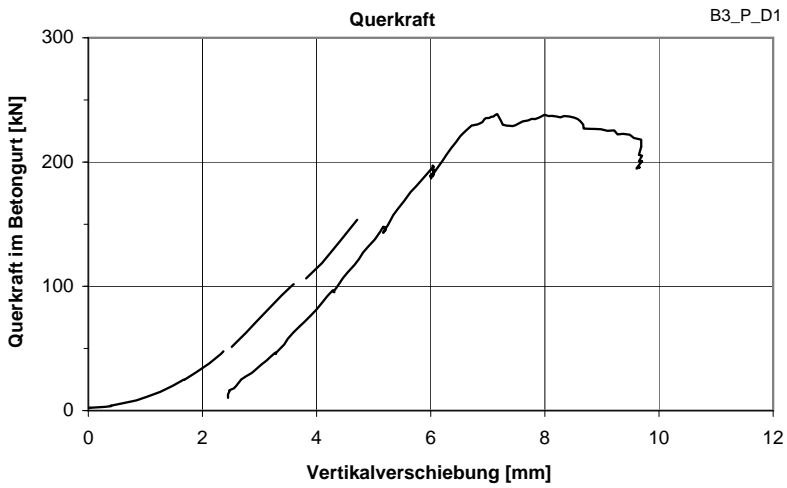
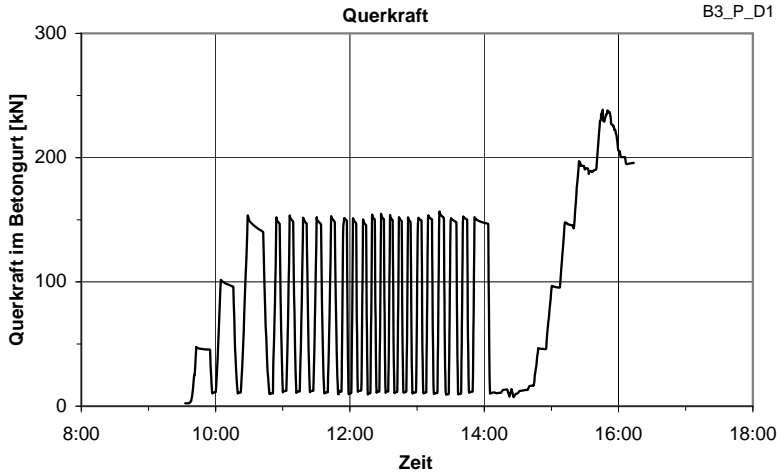


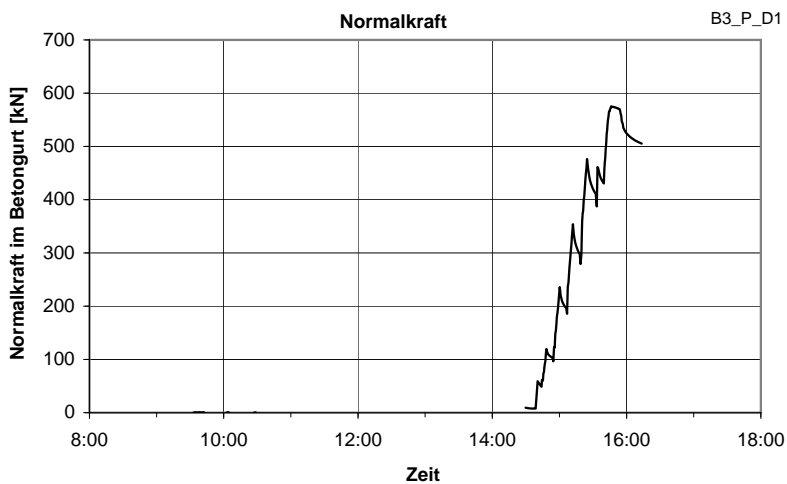
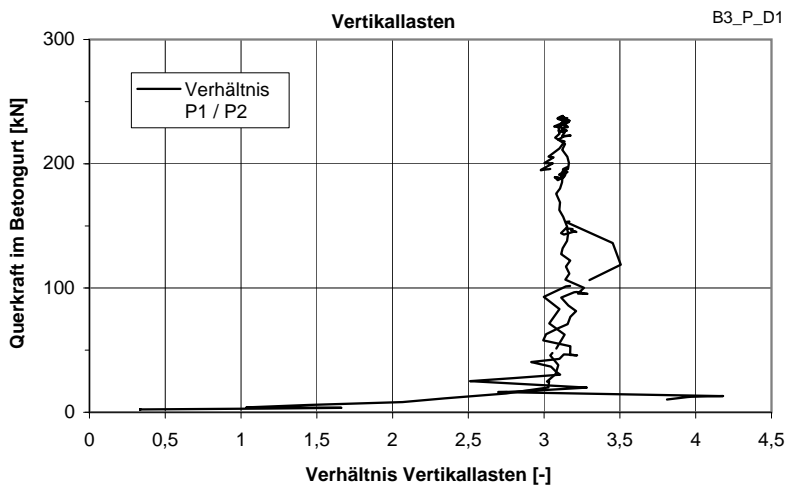
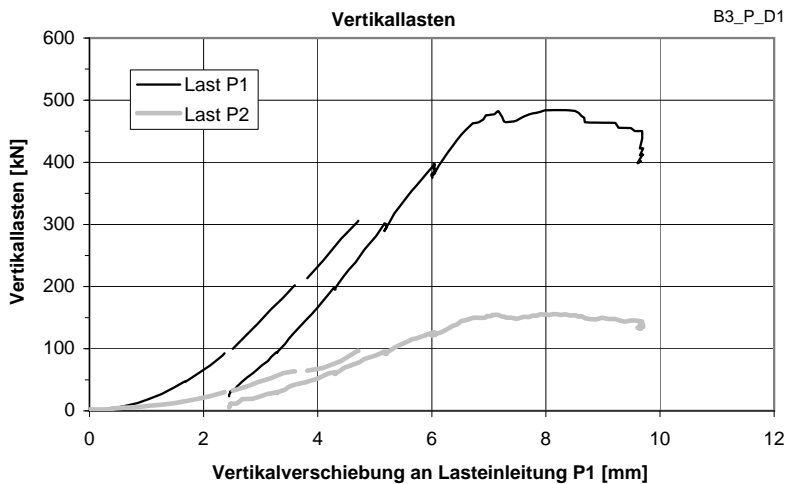


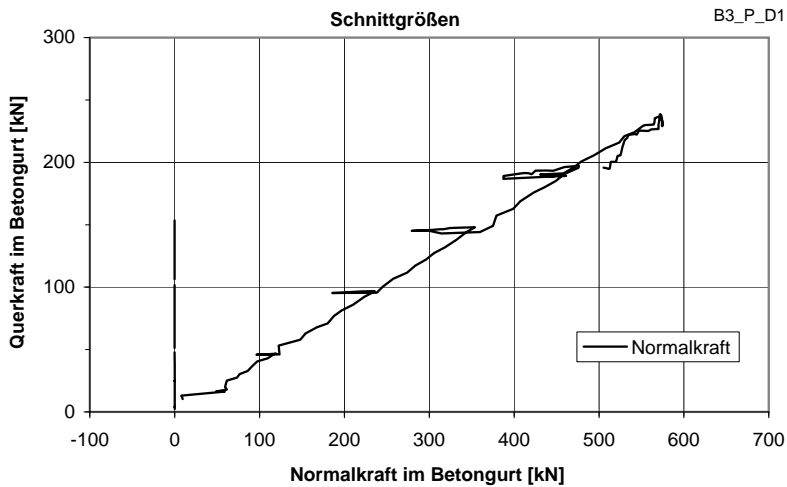
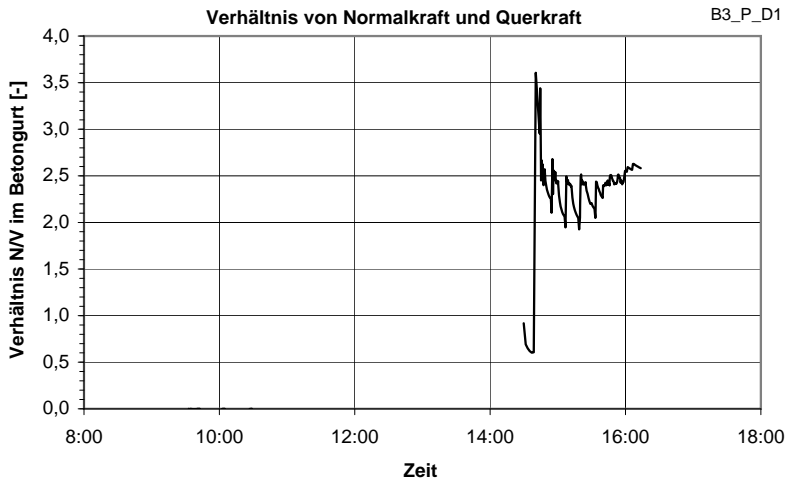


B.25. Versuch B3_P_D1

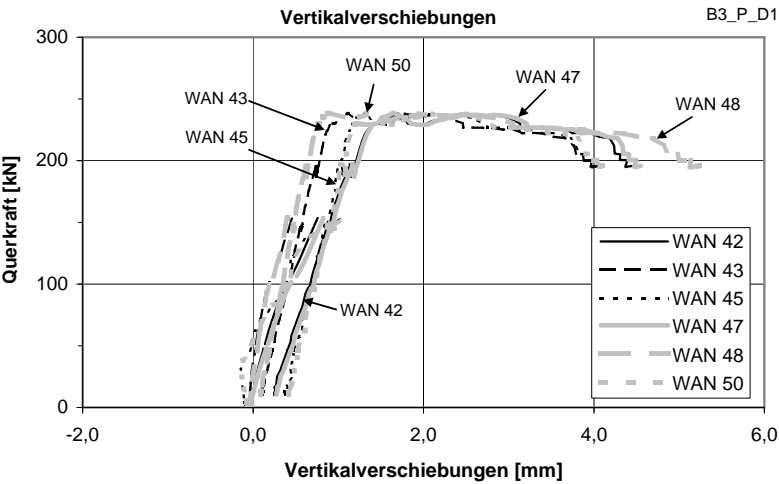
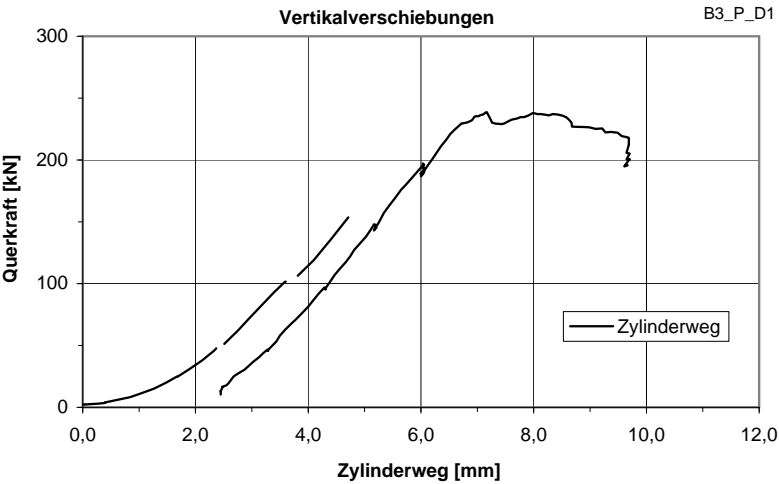
B.25.1. Kräfte

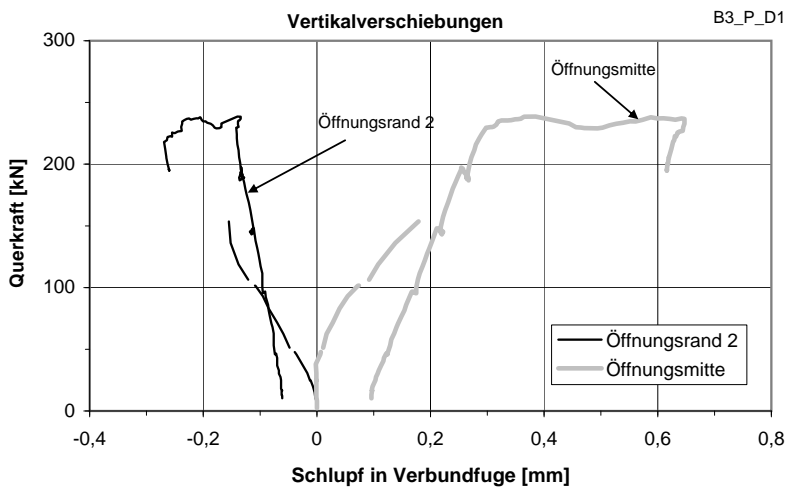
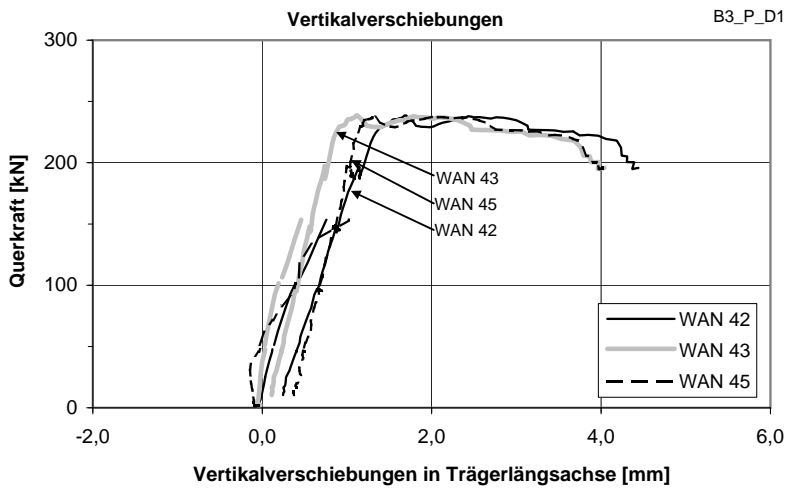




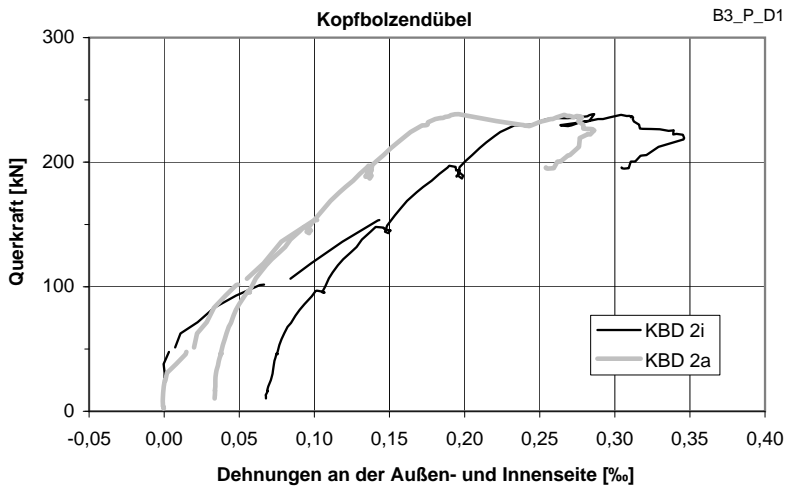
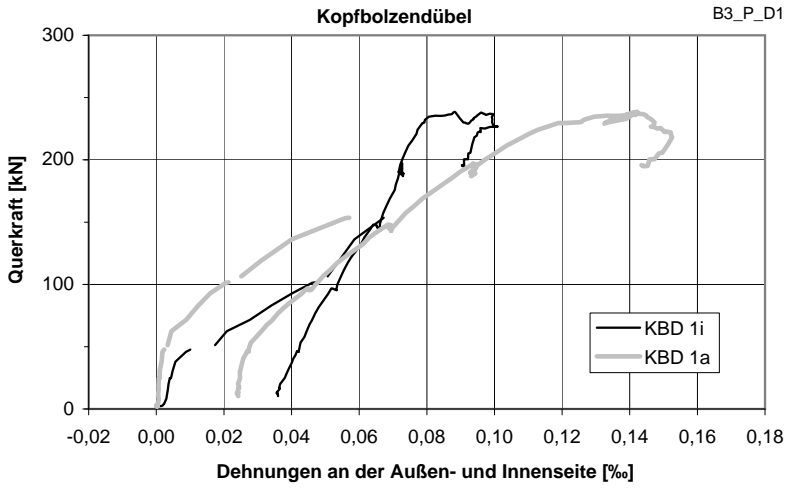


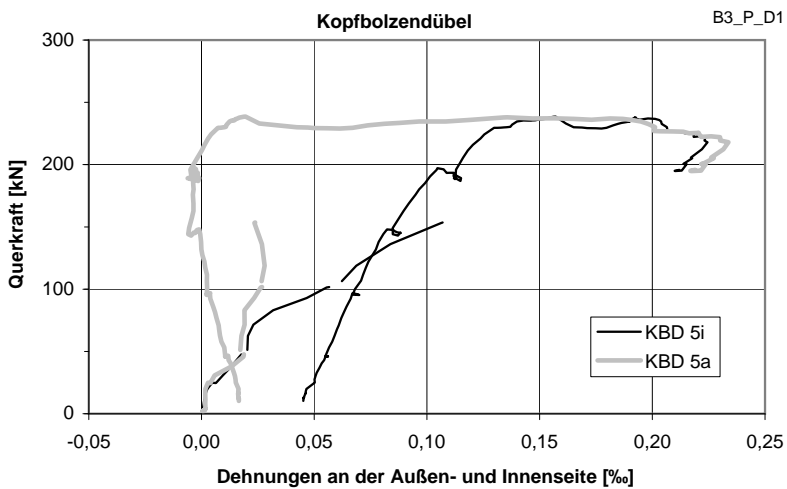
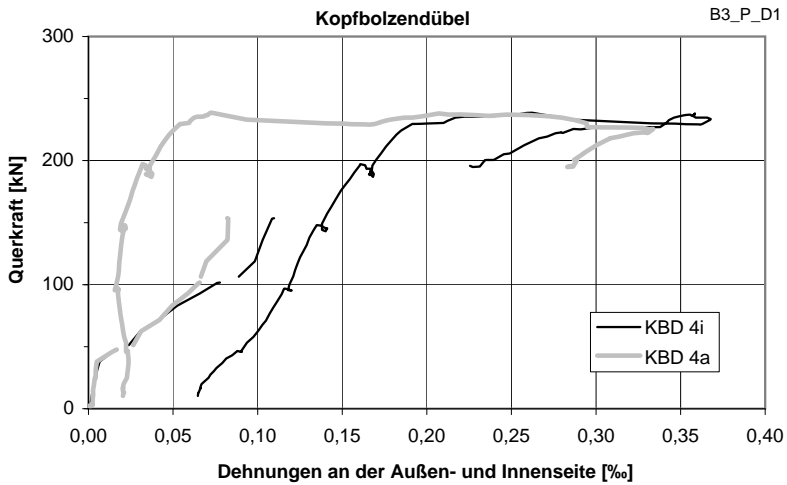
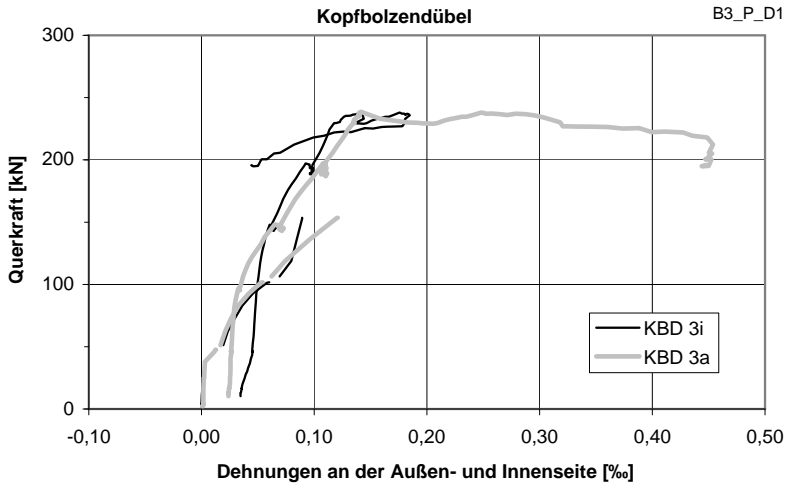
B.25.2. Verformungen

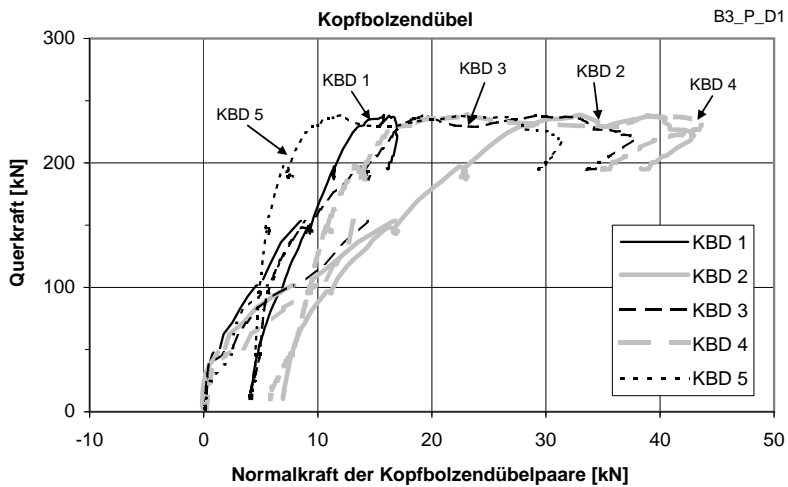
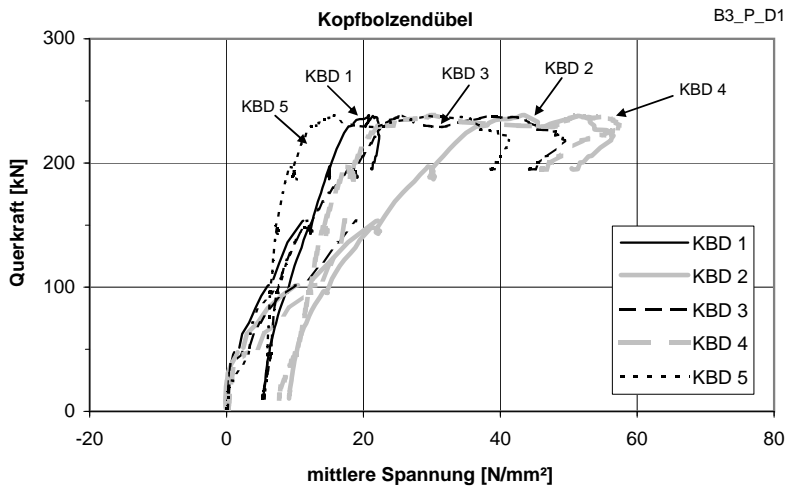
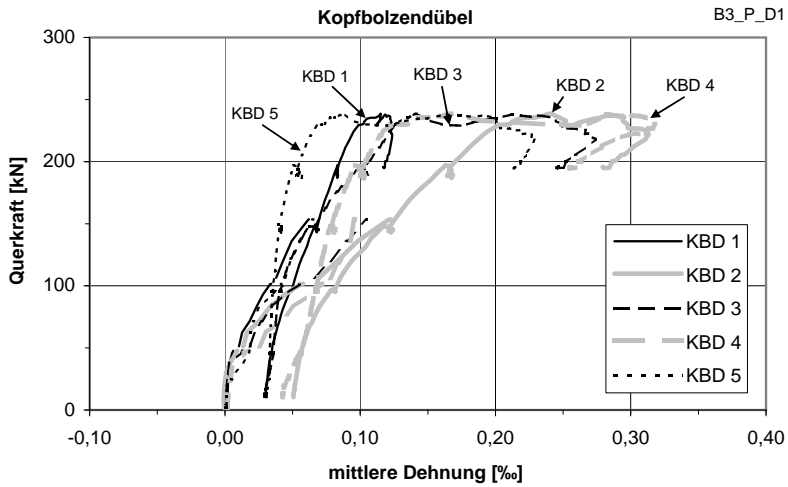




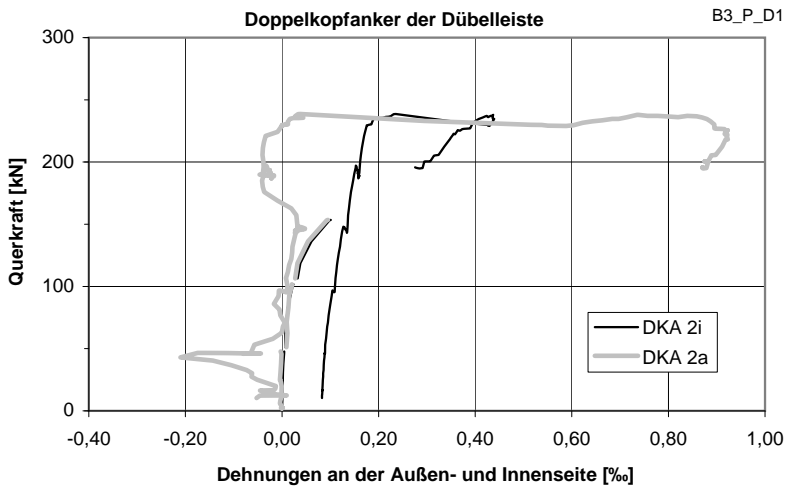
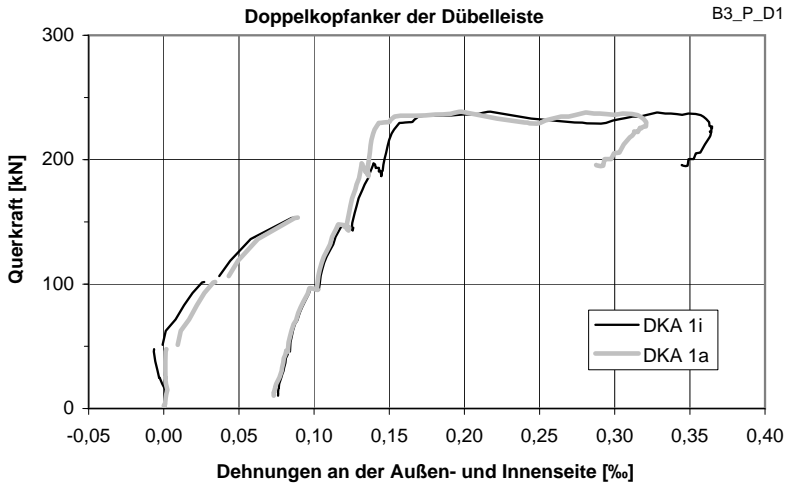
B.25.3. Kopfbolzendübel

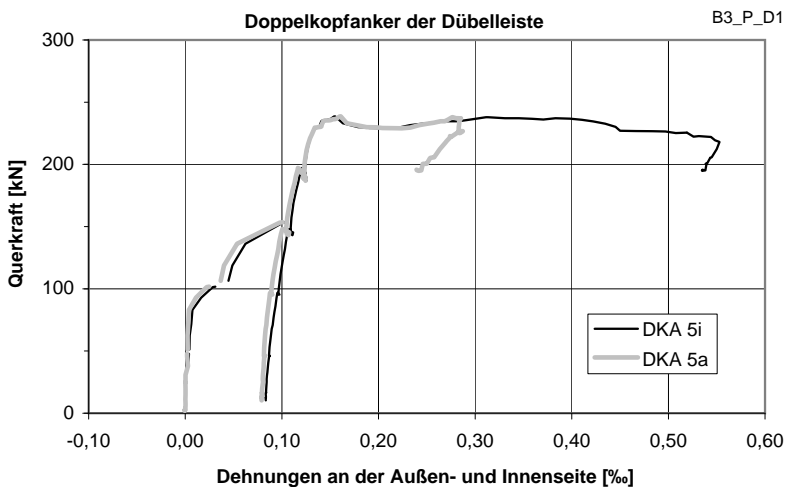
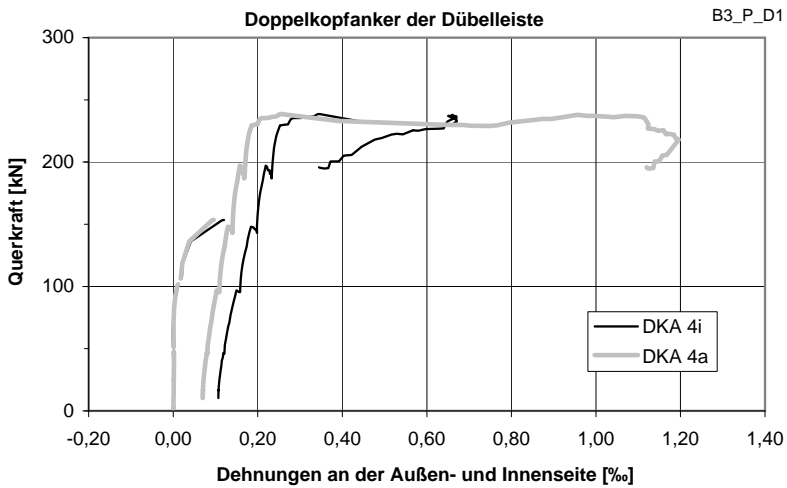
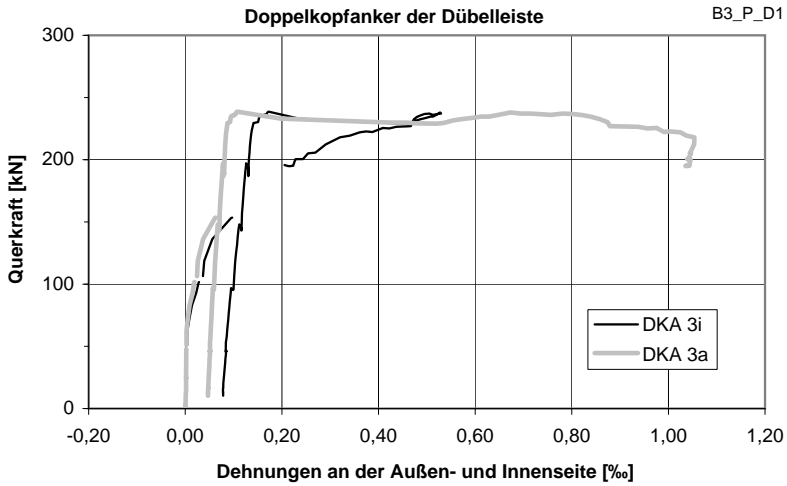


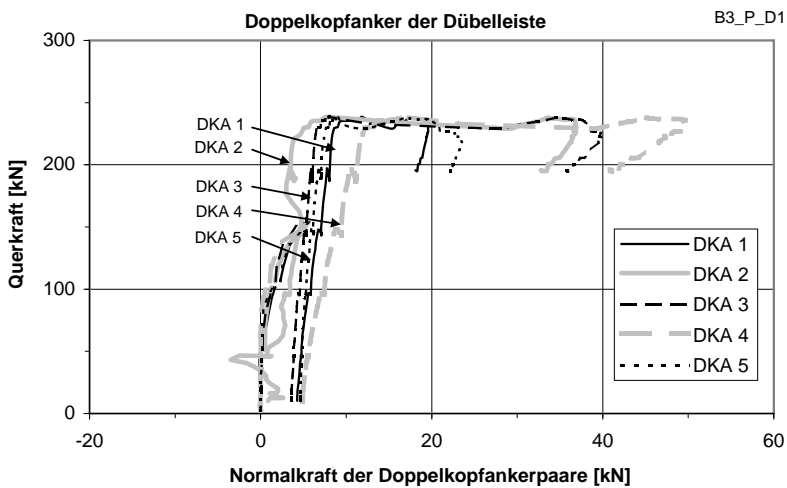
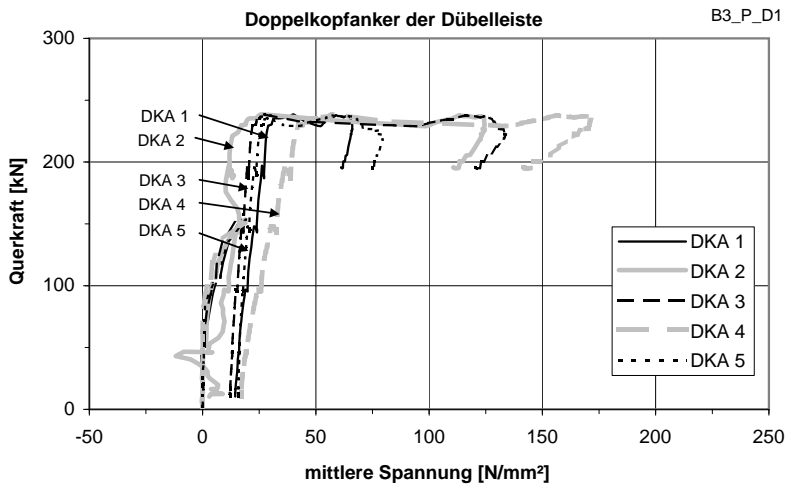
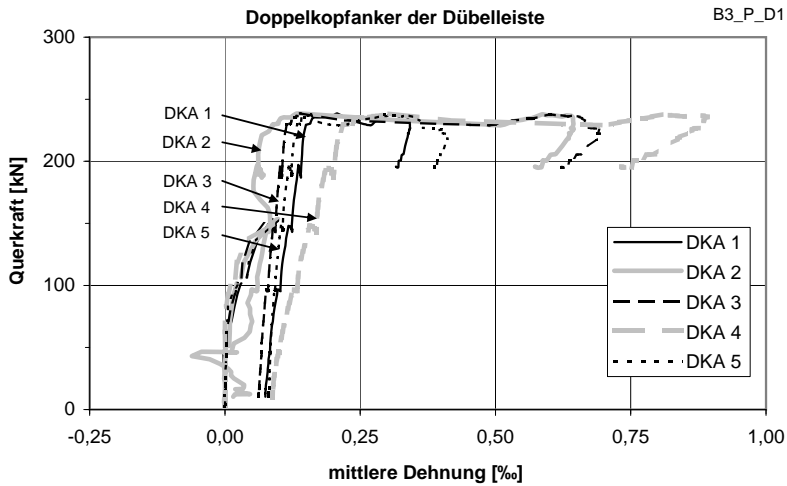




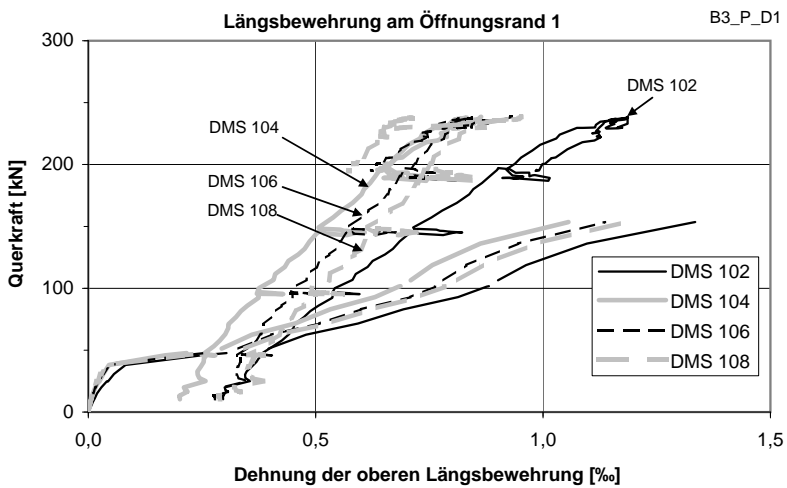
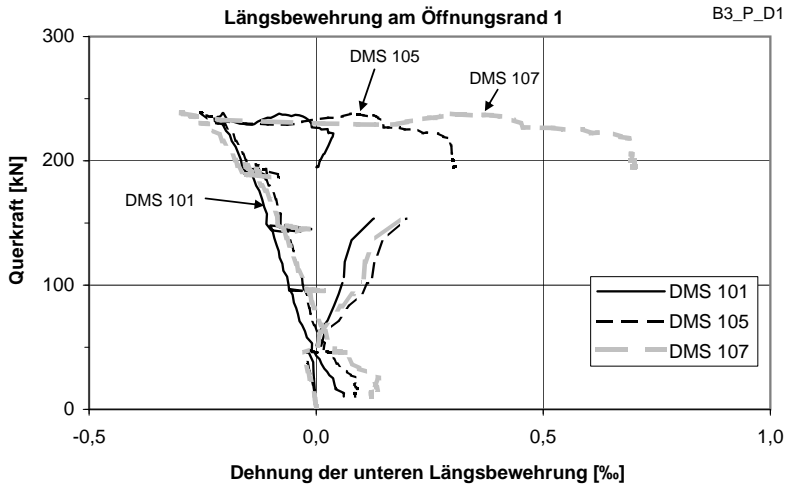
B.25.4. Doppelkopfanker

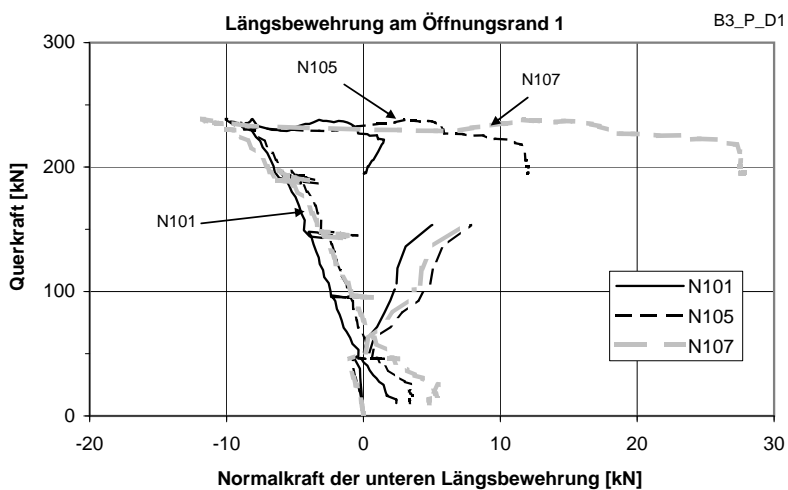
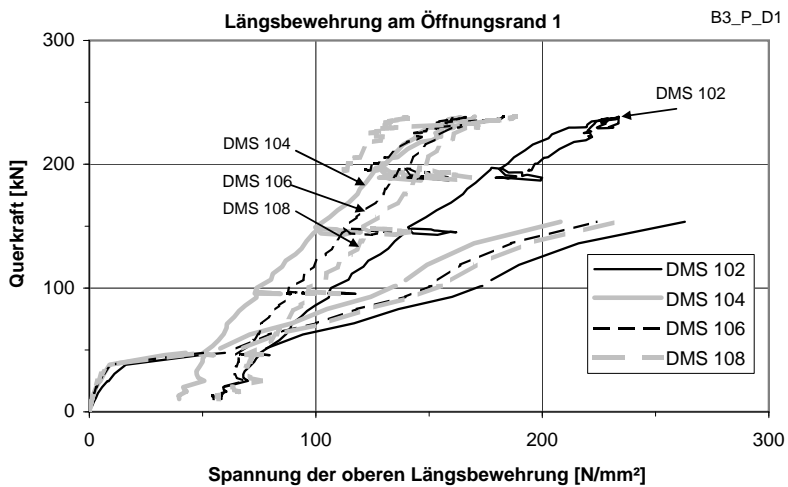
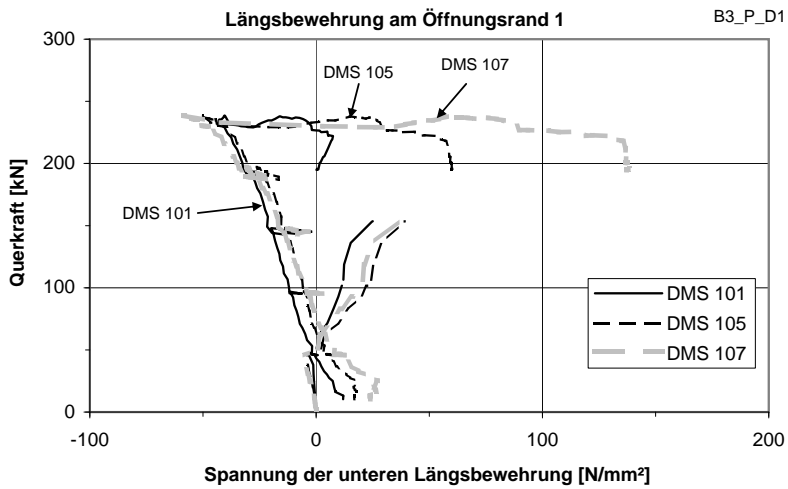


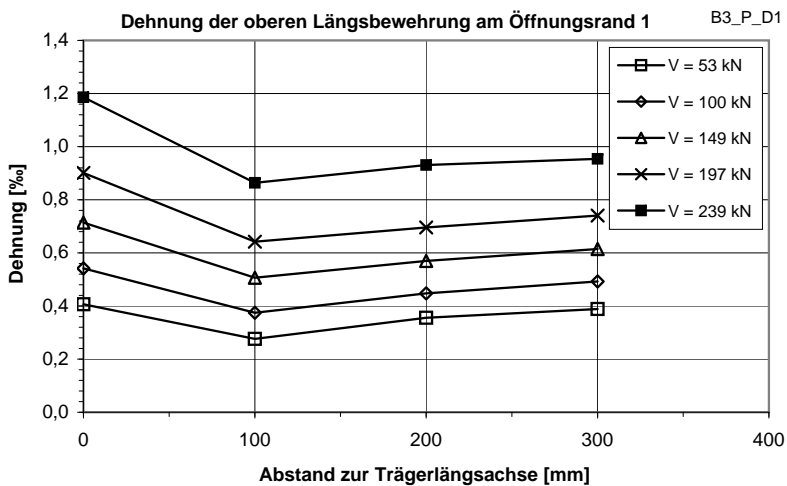
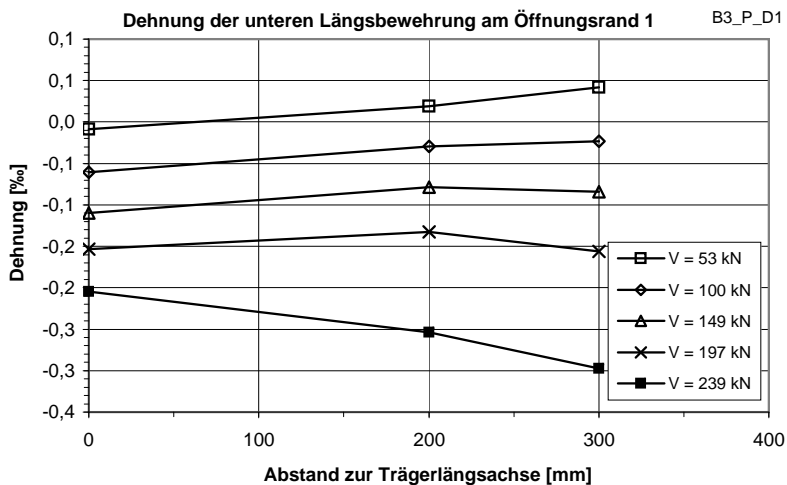
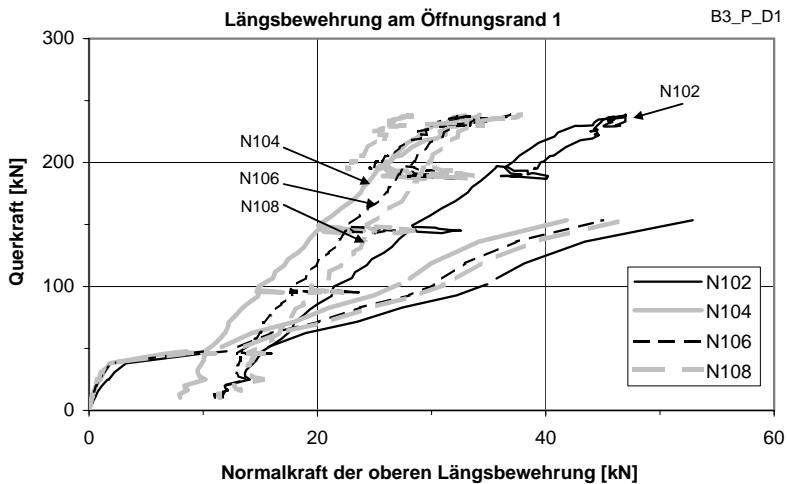


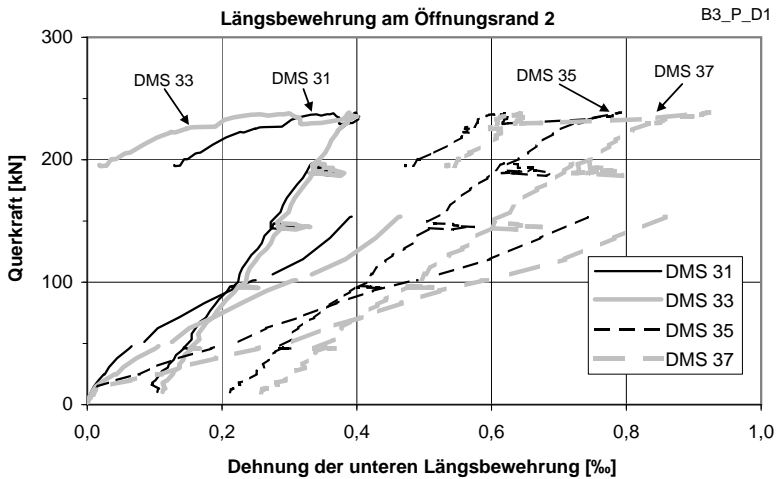
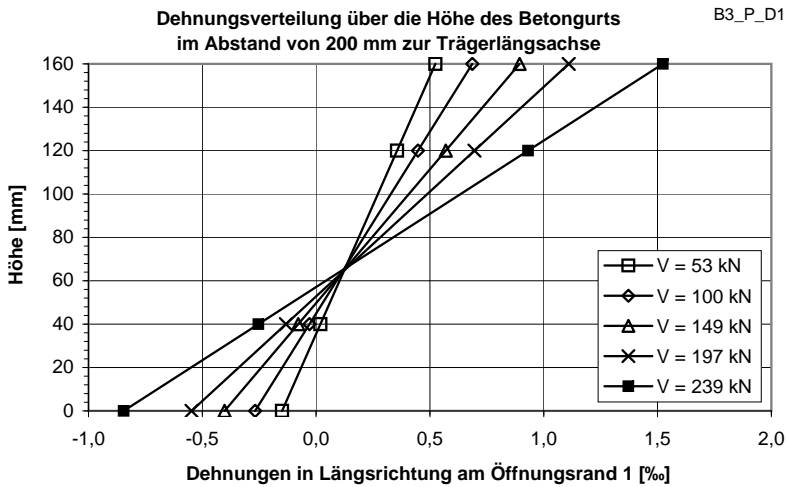
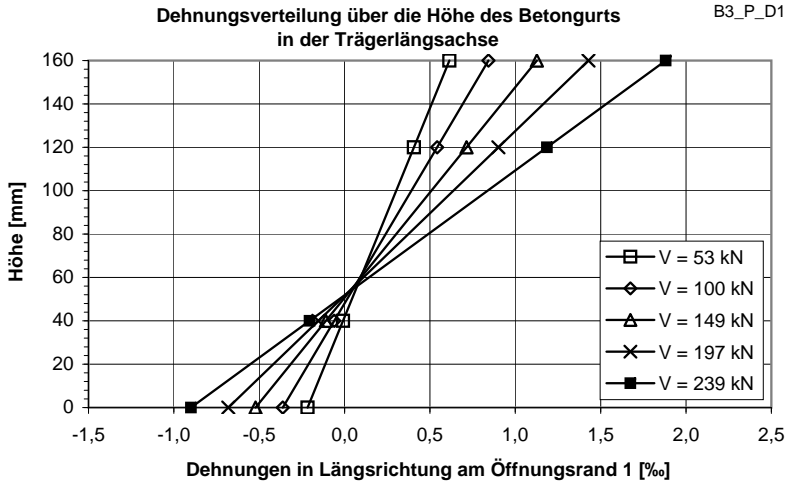


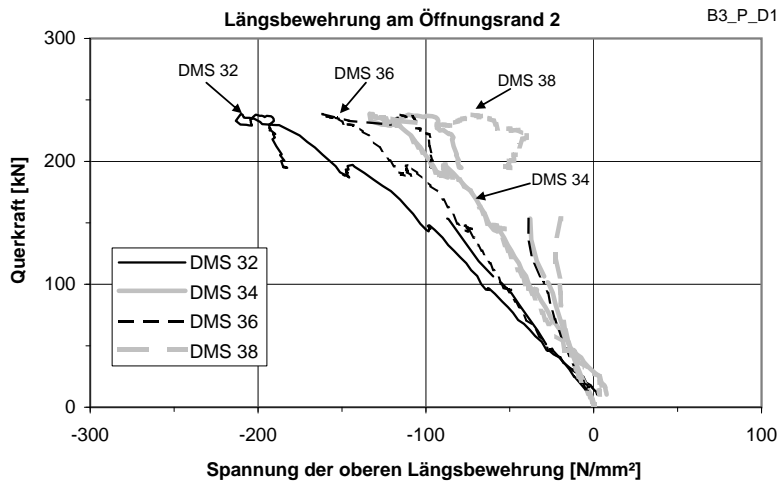
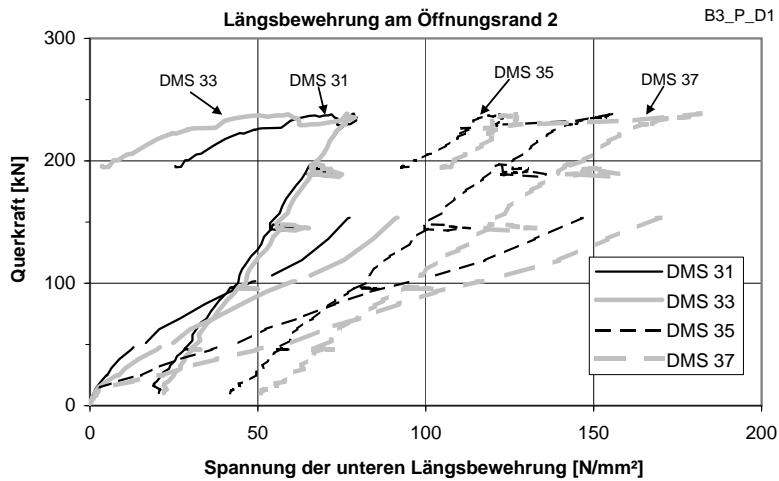
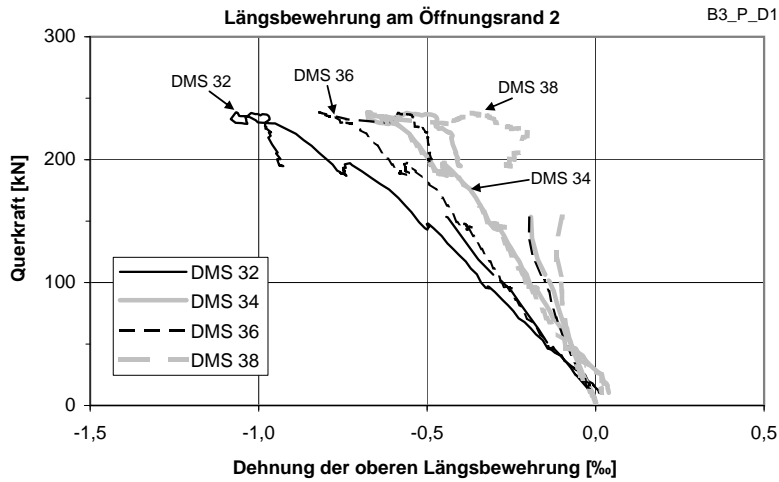
B.25.5. Längsbewehrung

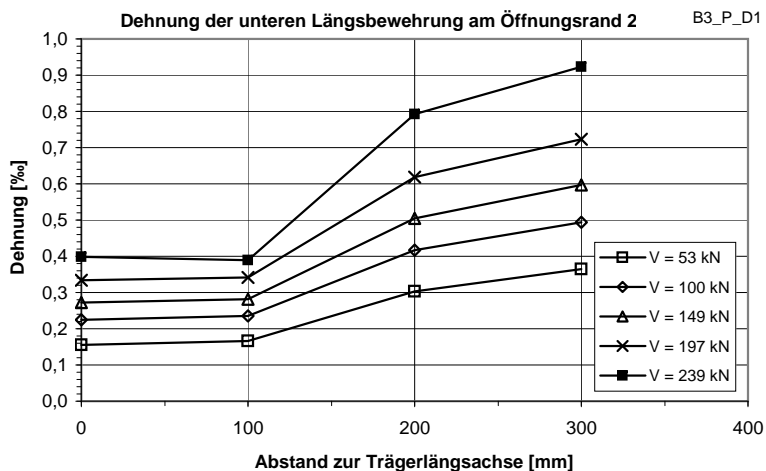
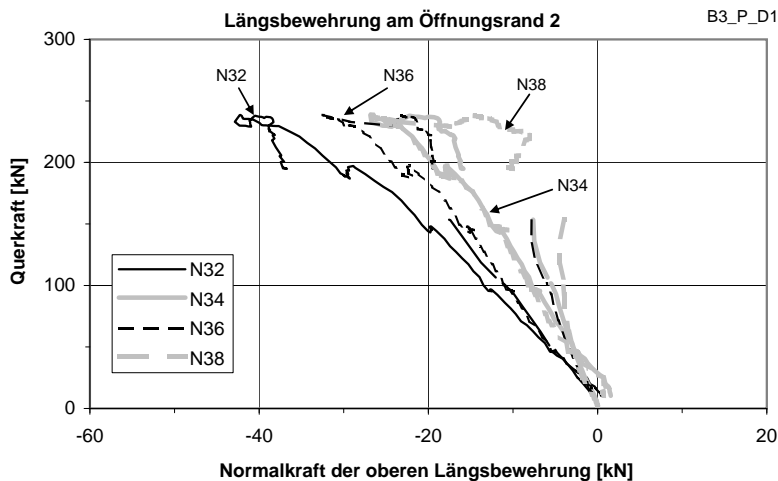
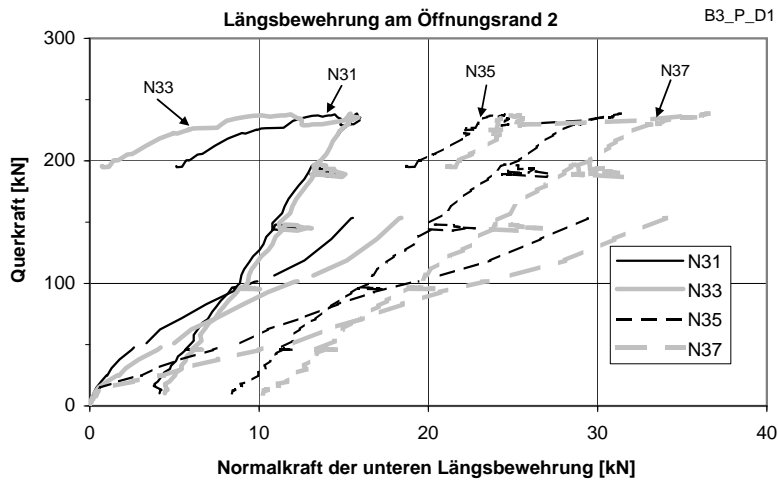


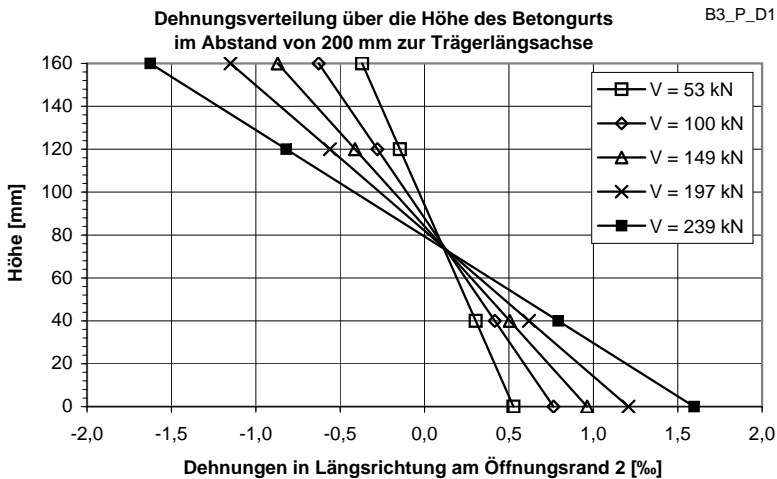
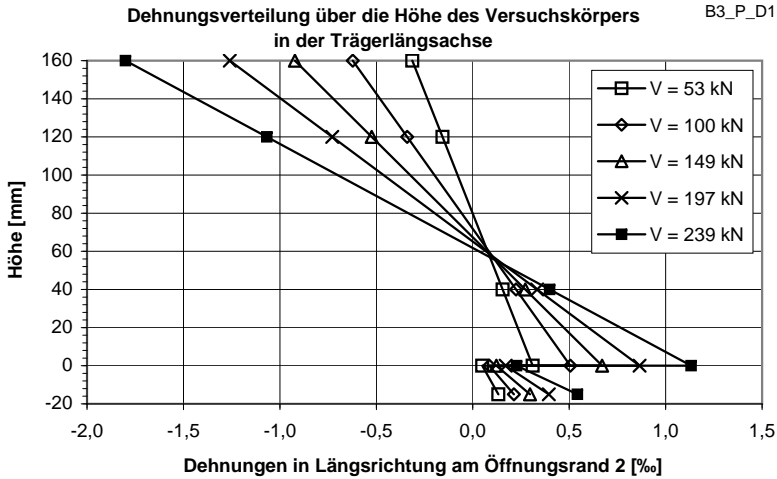
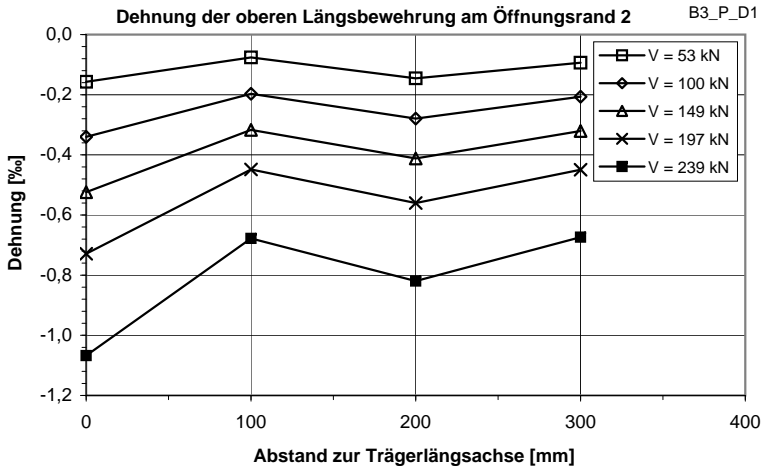




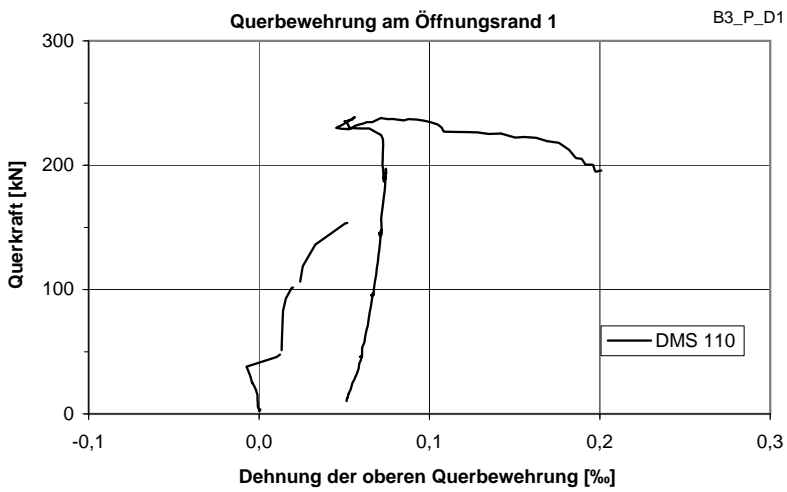
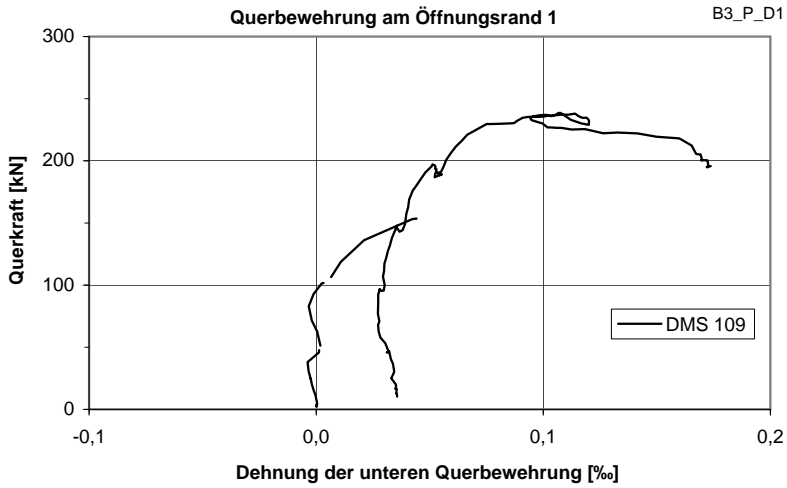


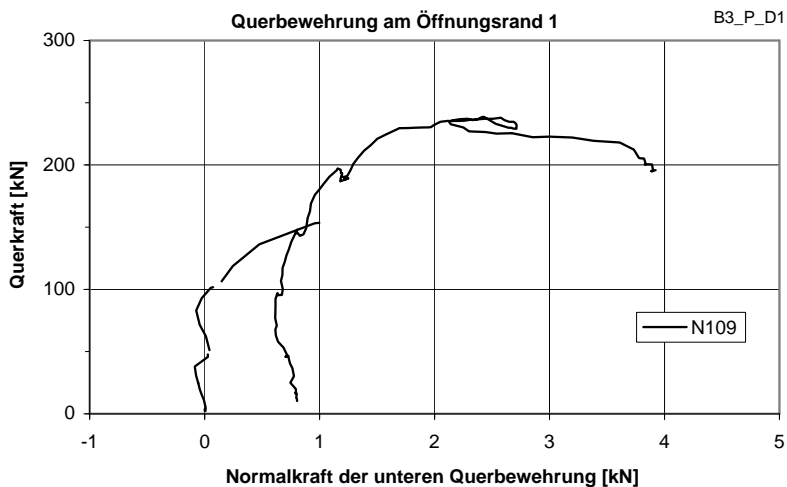
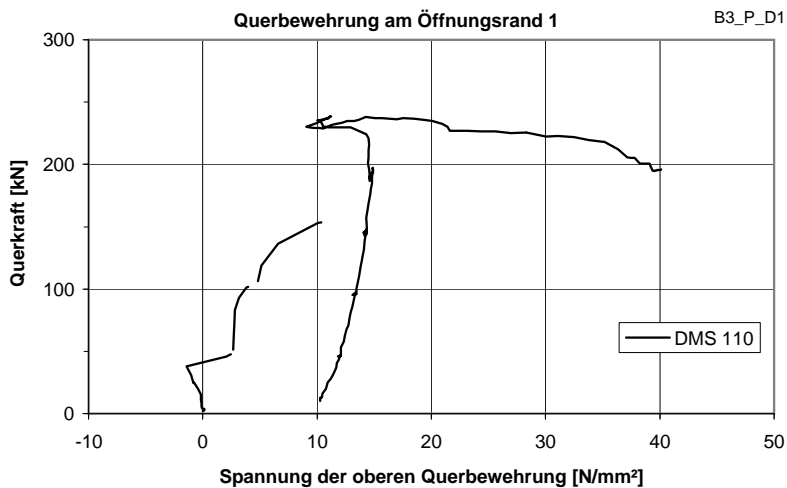
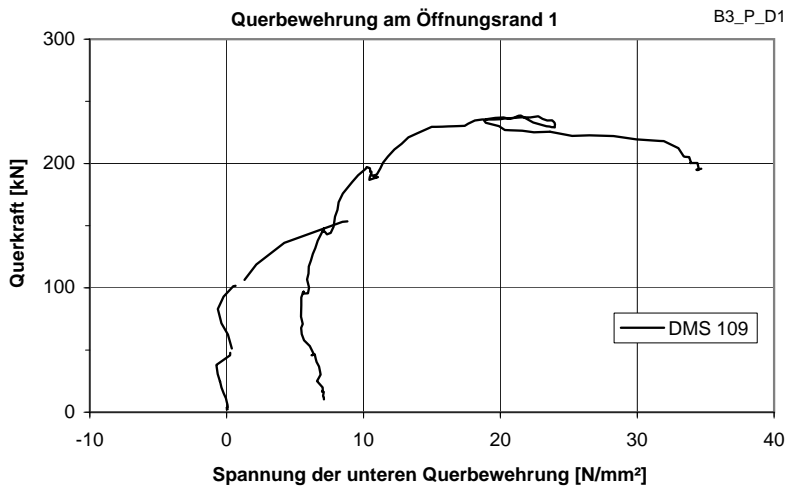


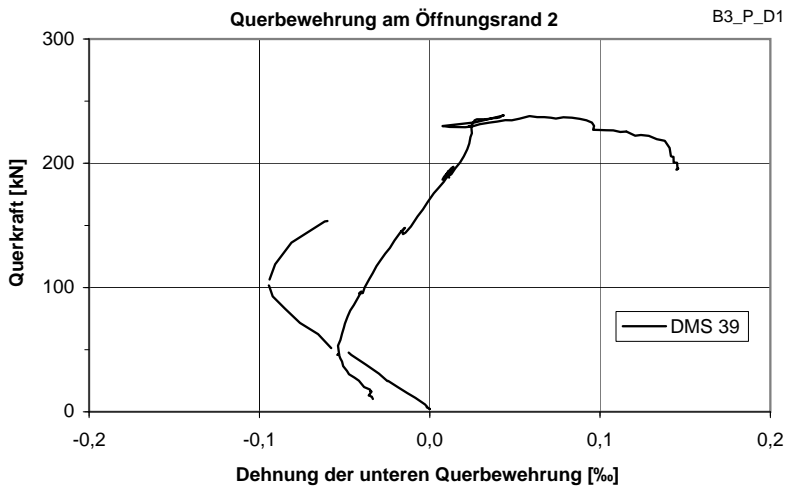
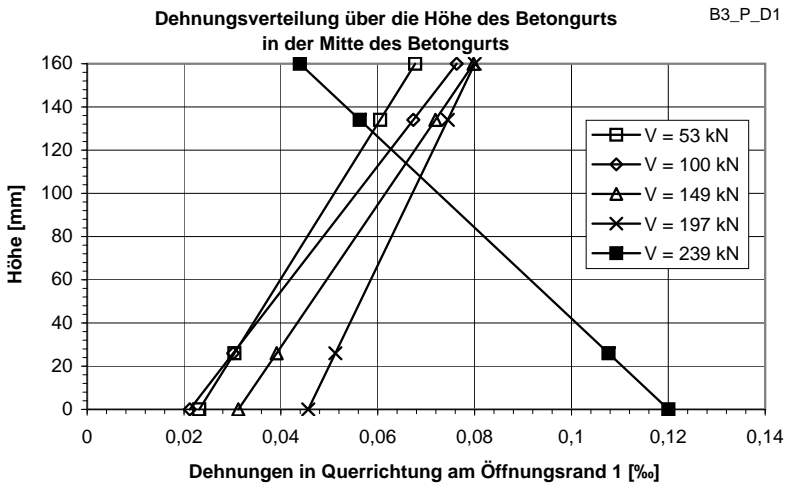
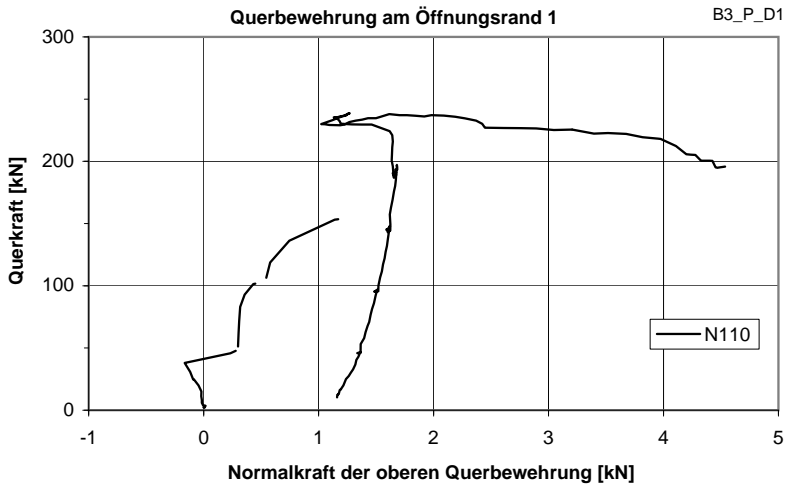


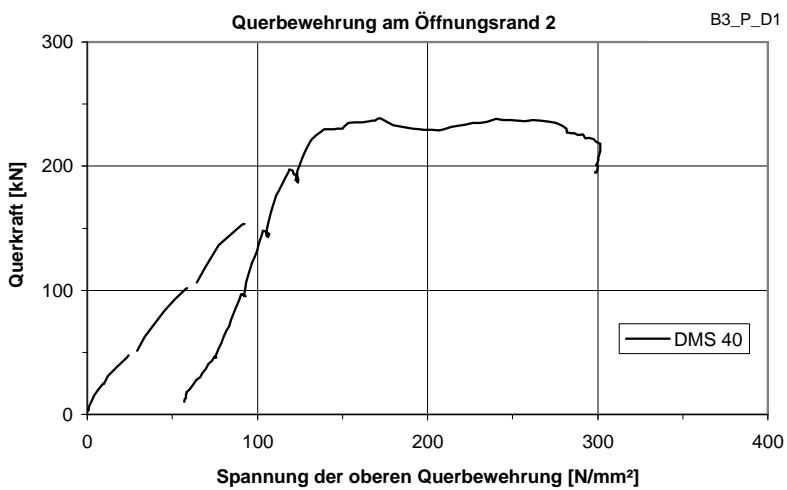
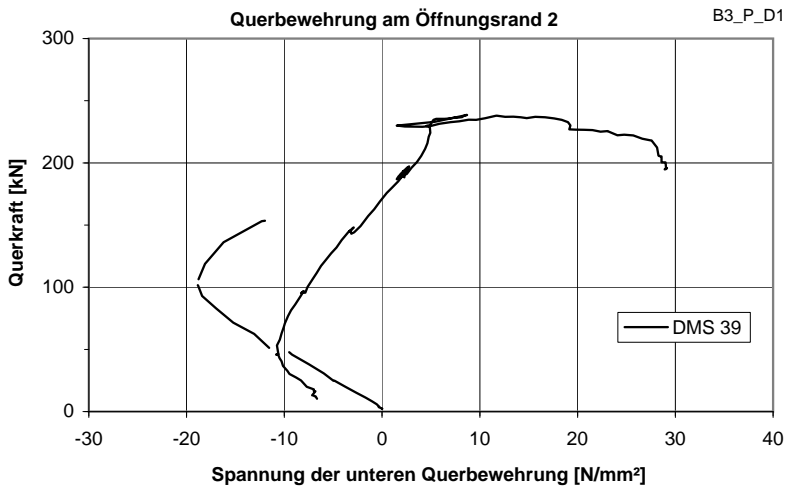
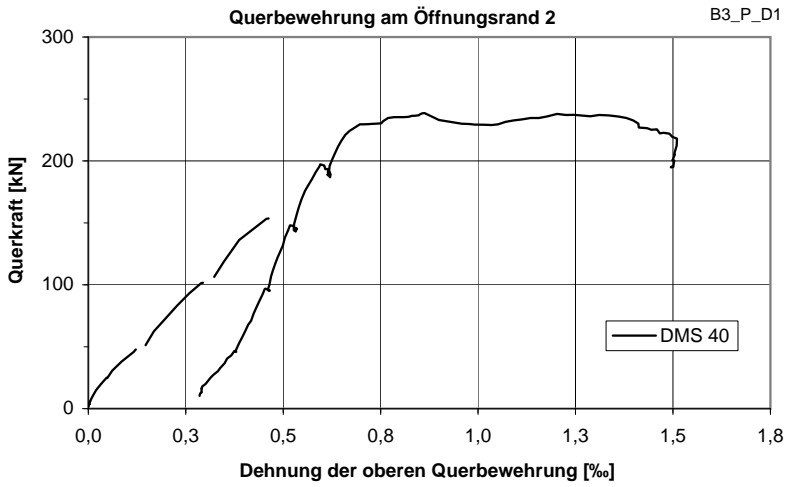


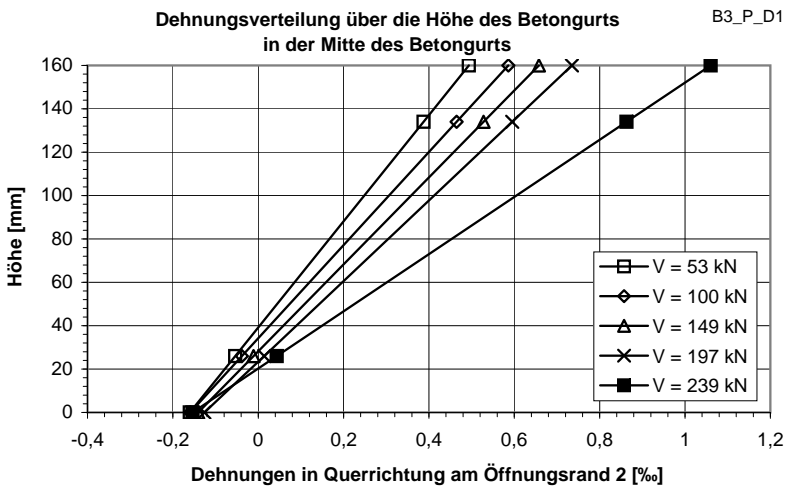
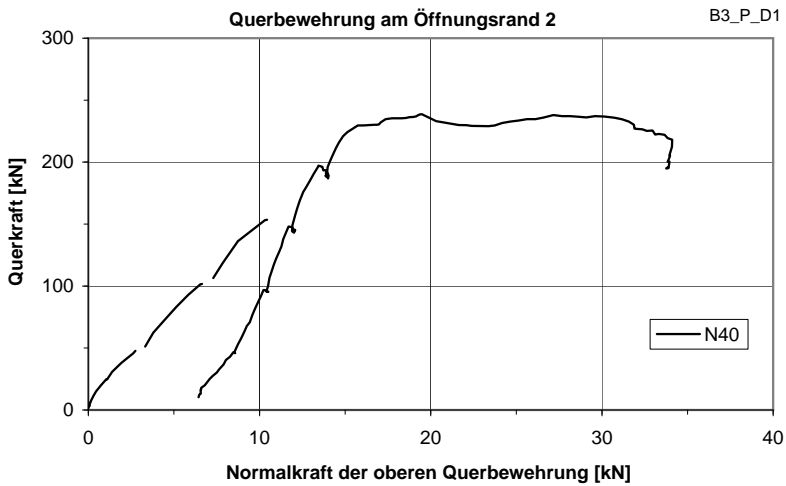
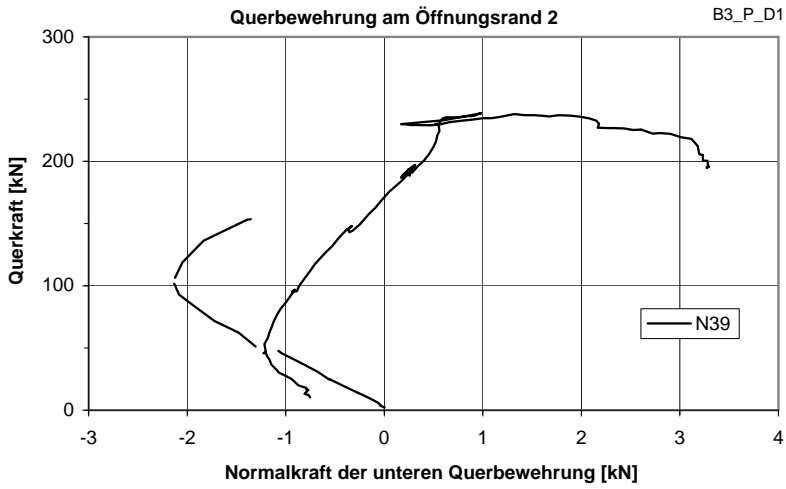
B.25.6. Querbewehrung



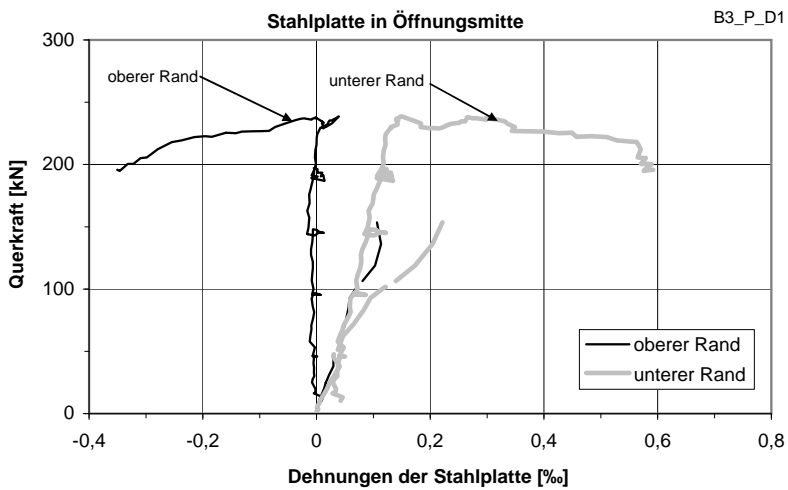
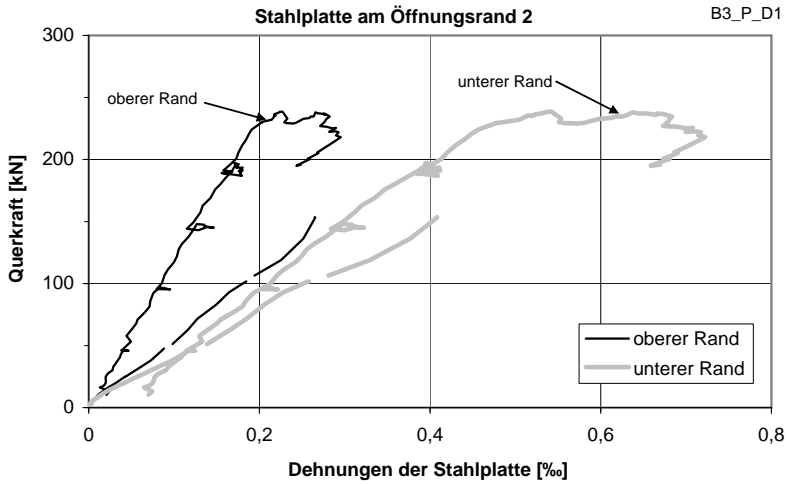


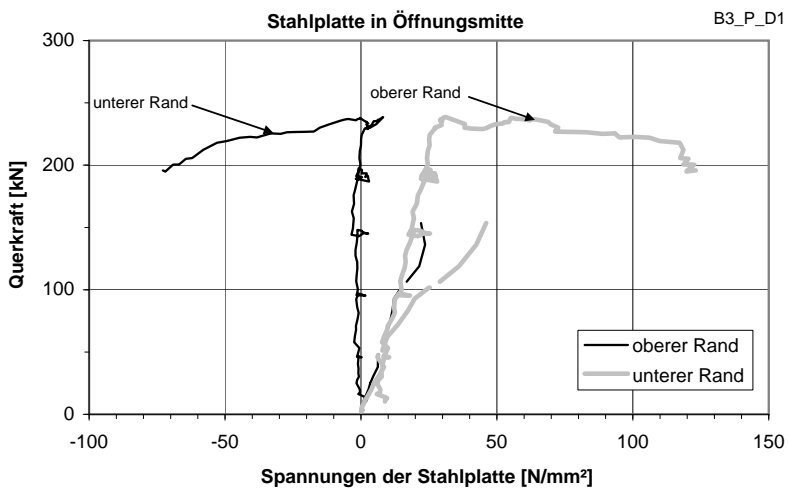
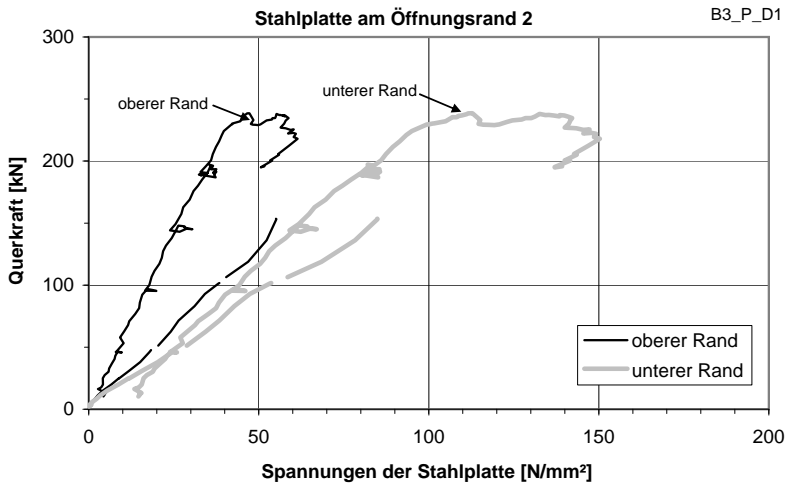
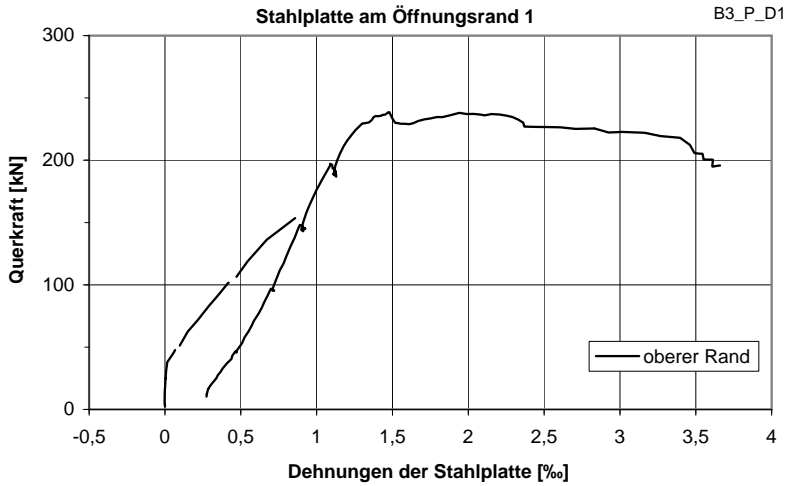


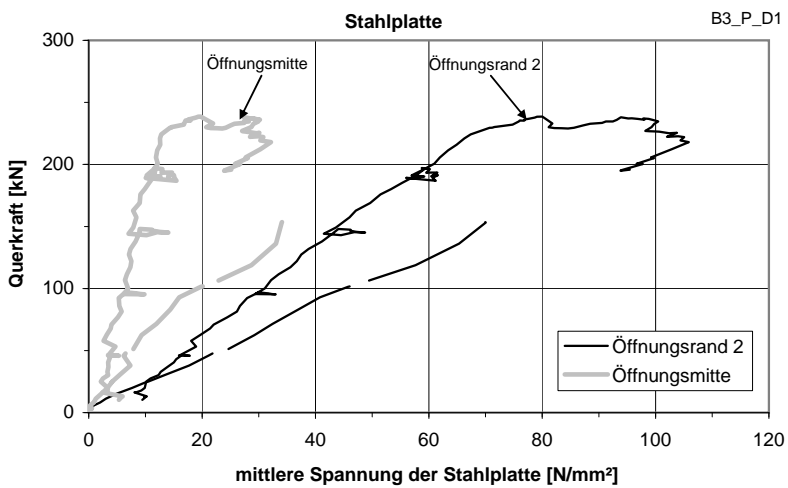
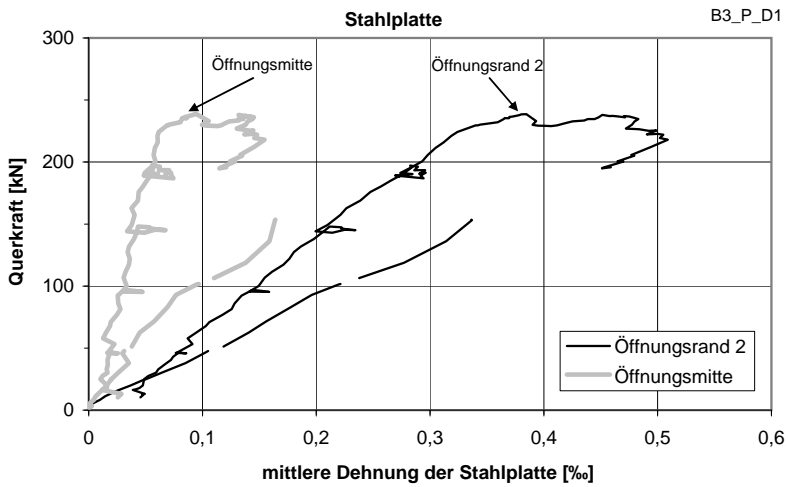
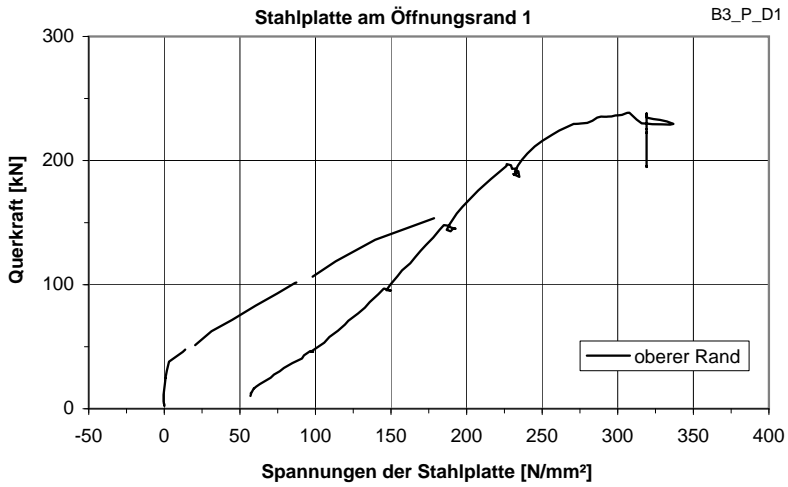


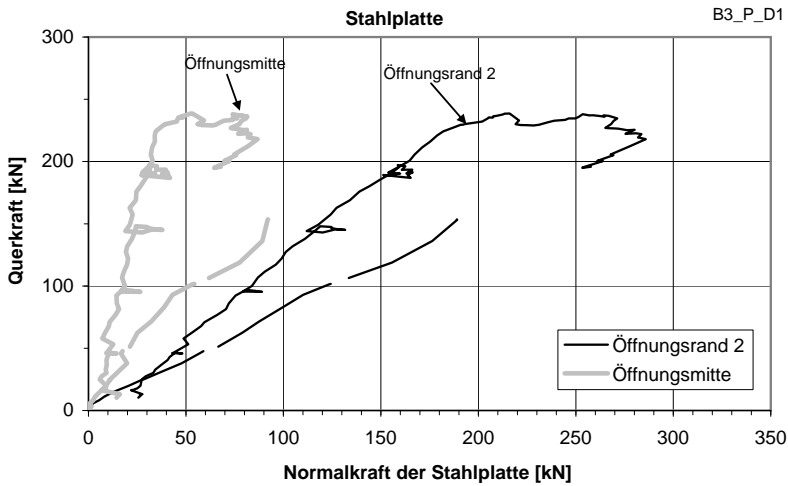


B.25.7. Stahlplatte

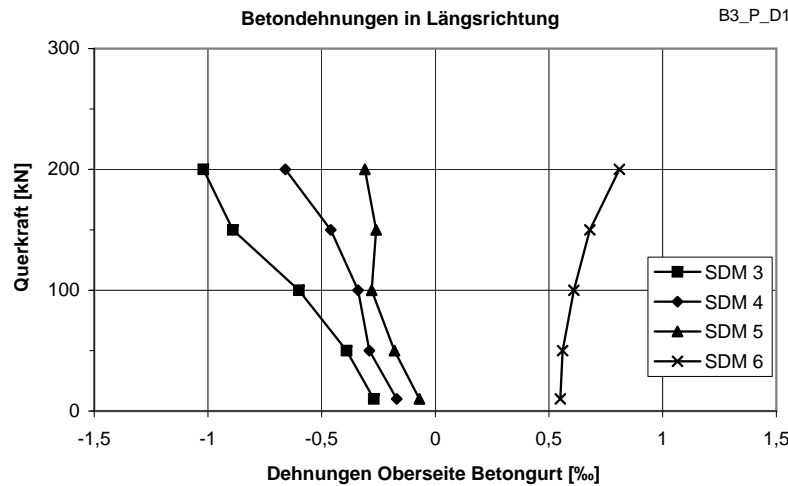


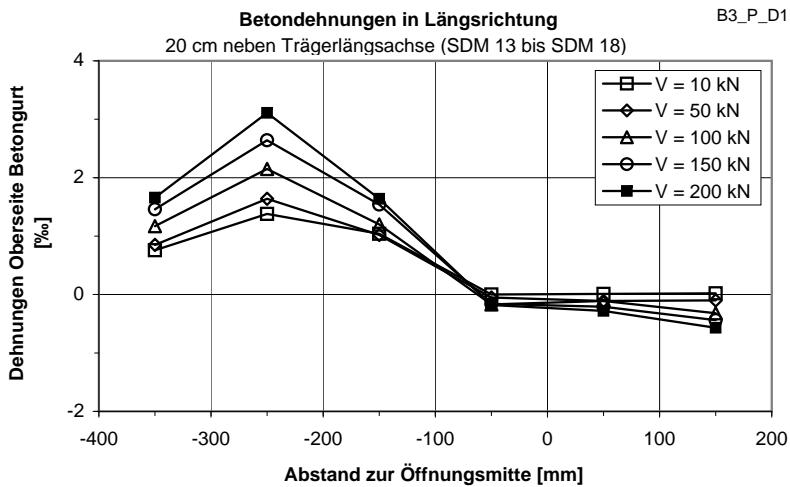
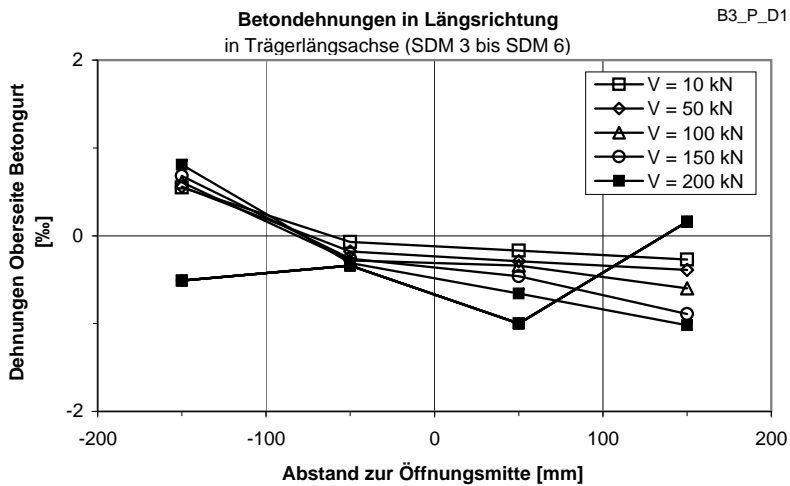
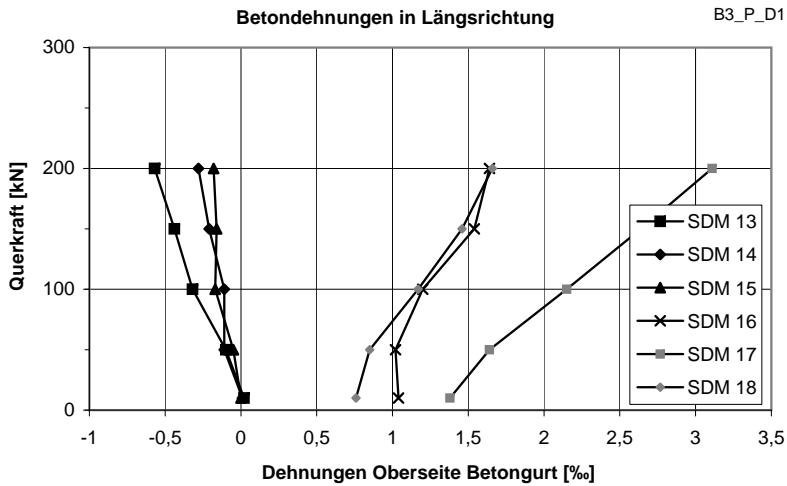


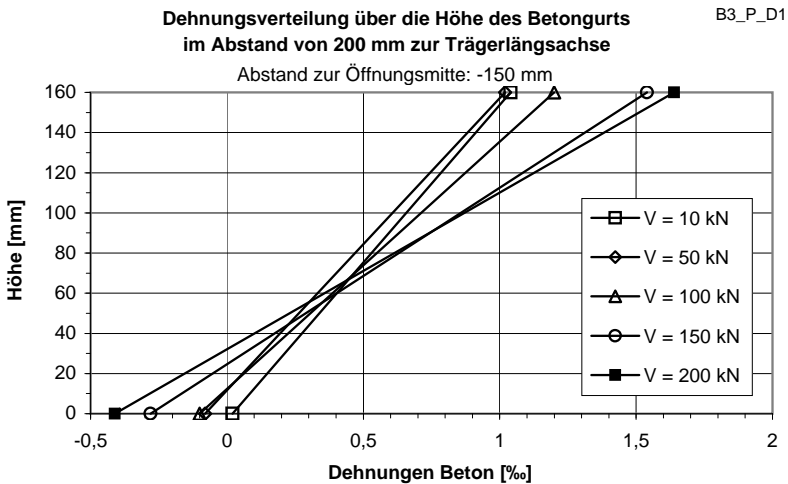
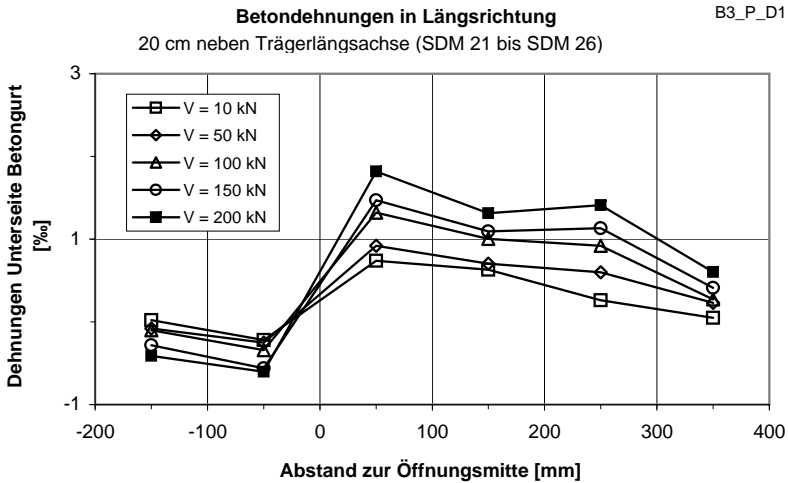
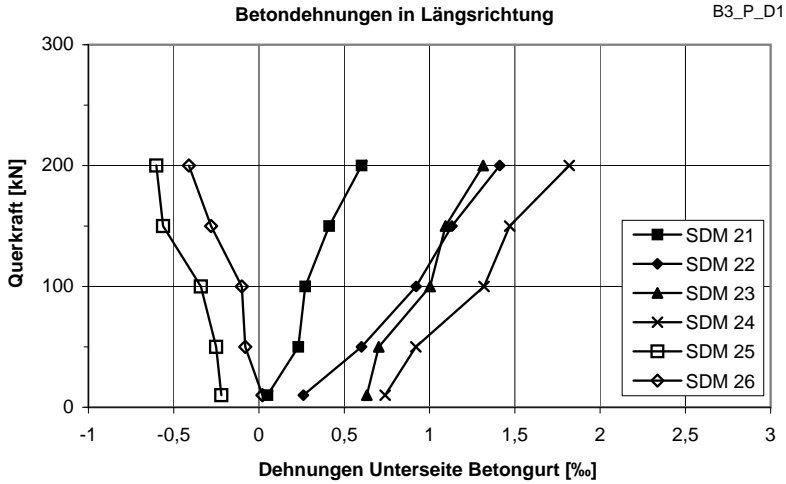


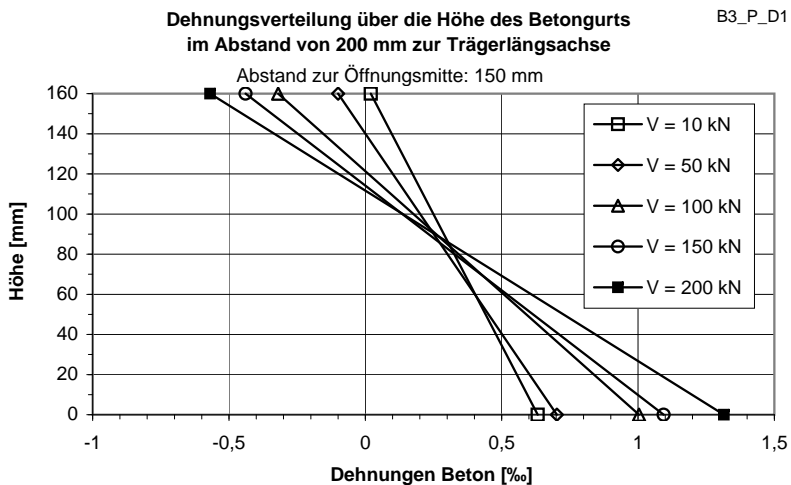
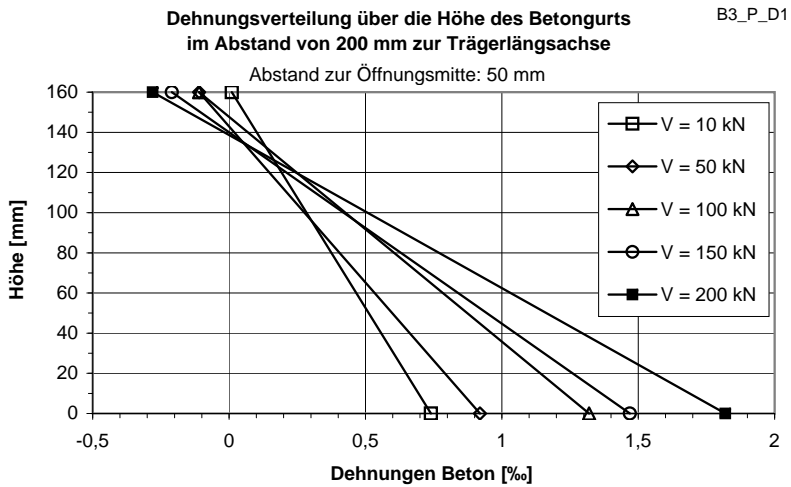
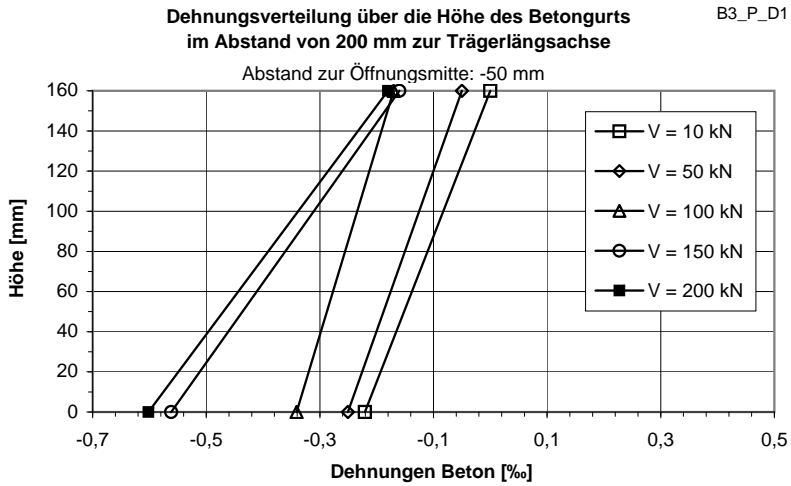


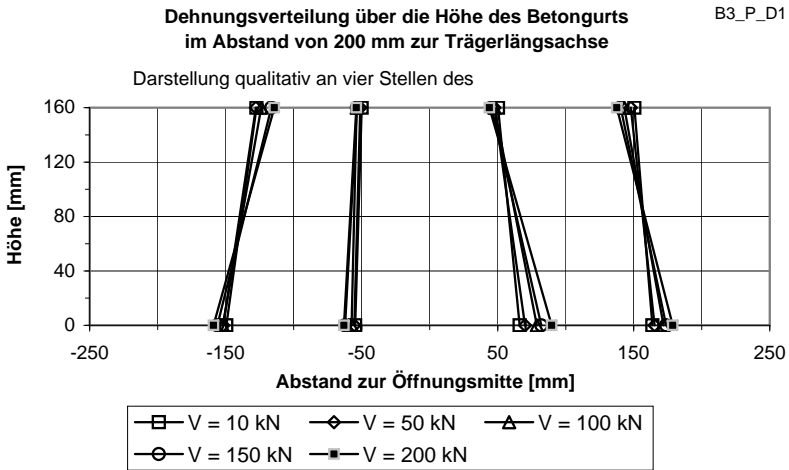
B.25.8. Betondehnungen





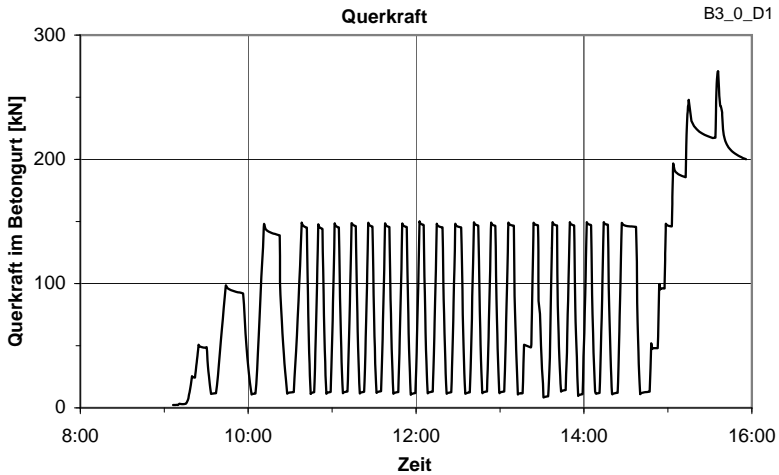


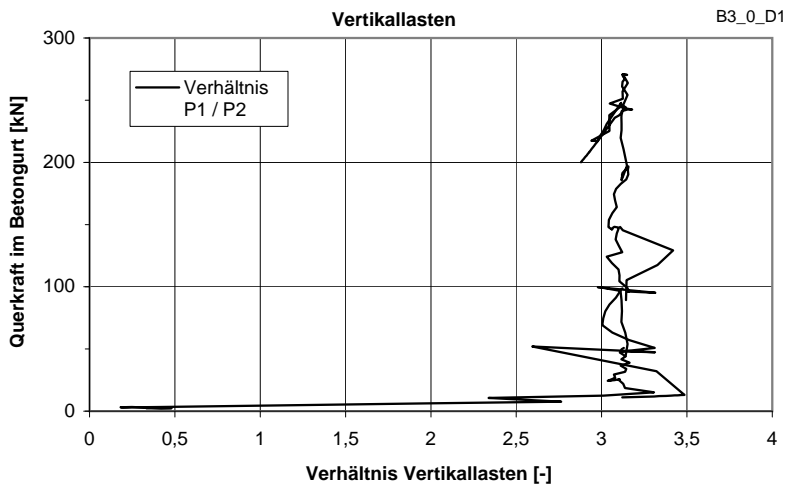
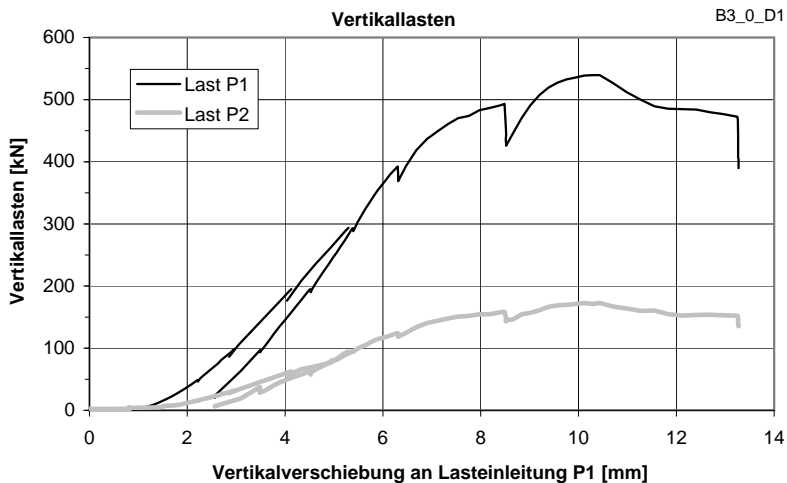
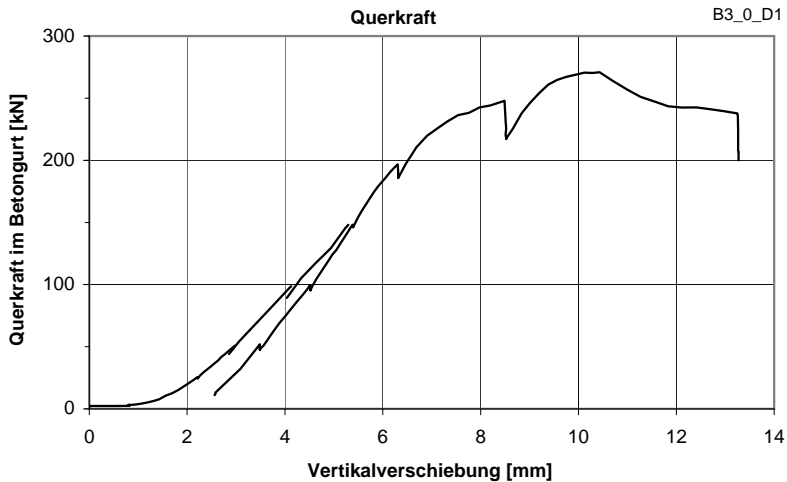




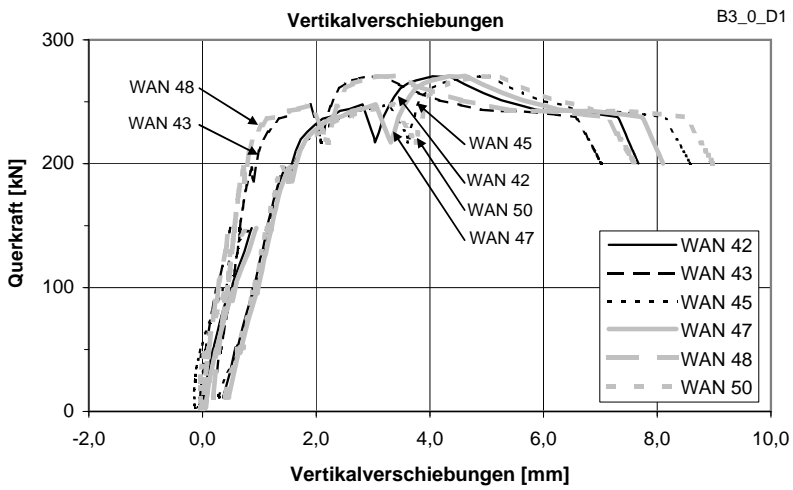
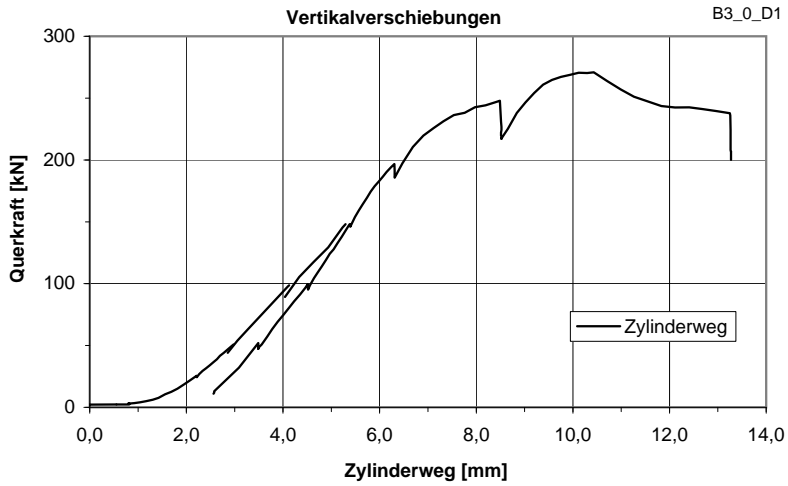
B.26. Versuch B3_0_D1

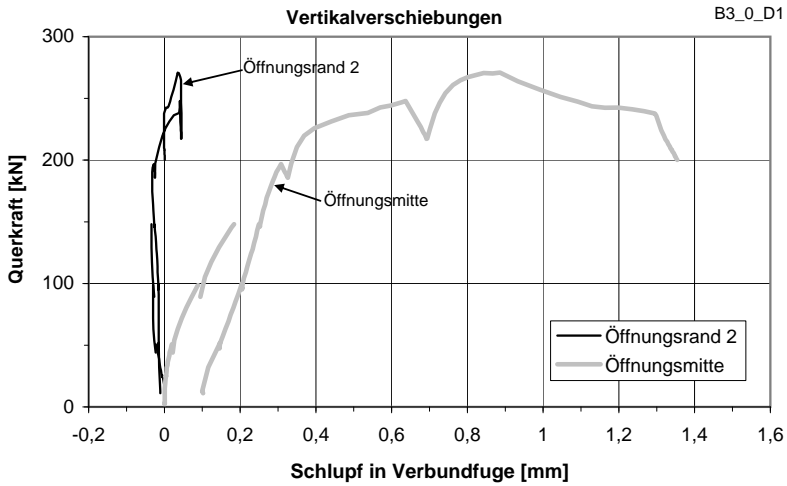
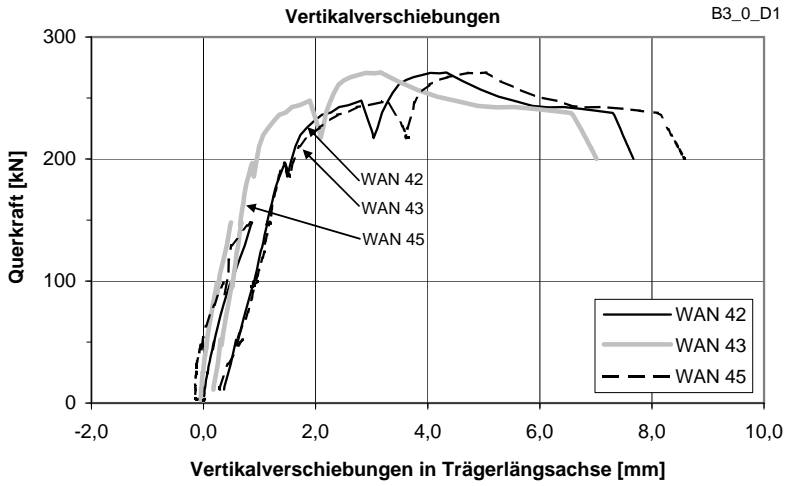
B.26.1. Kräfte



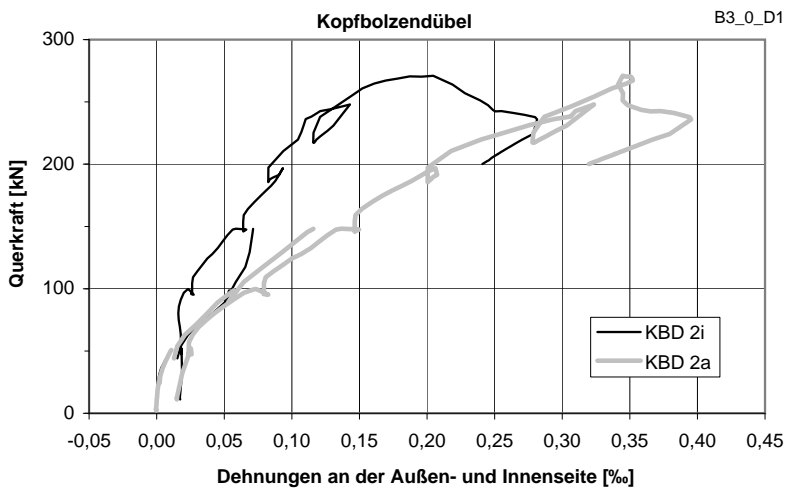
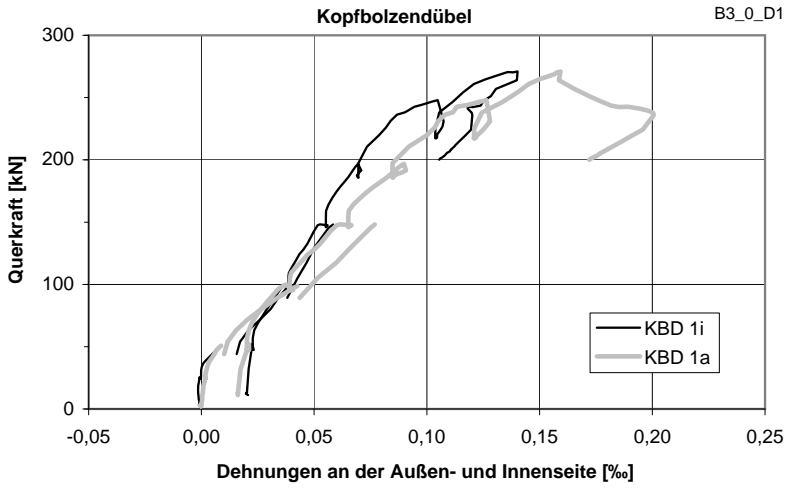


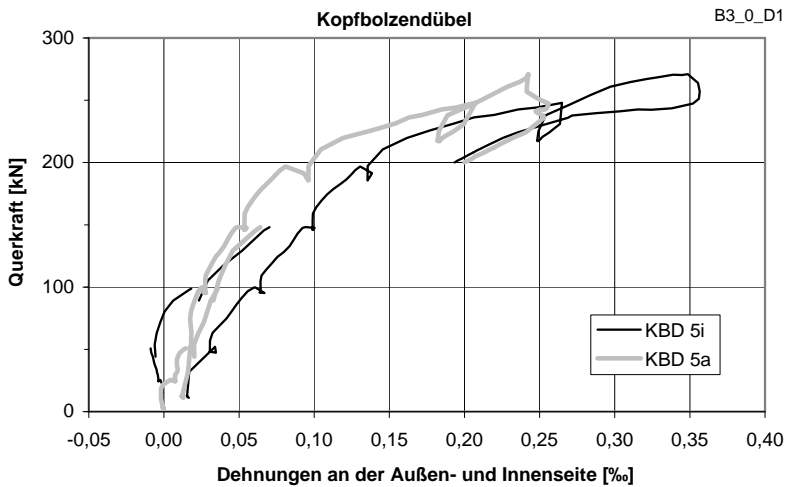
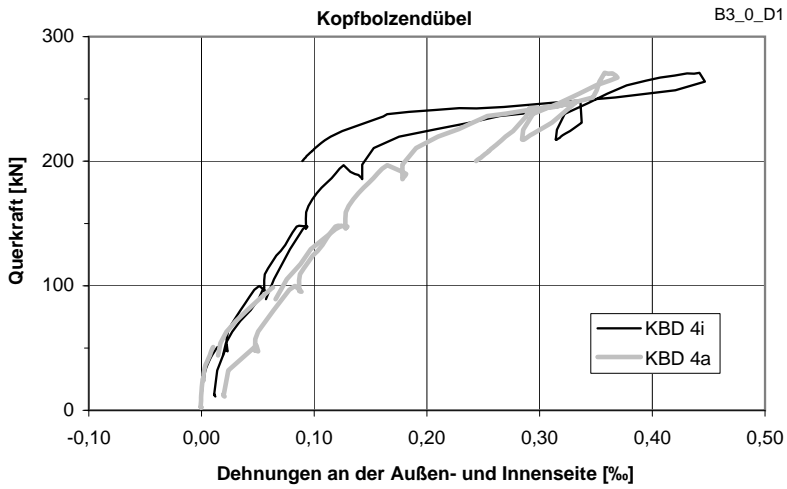
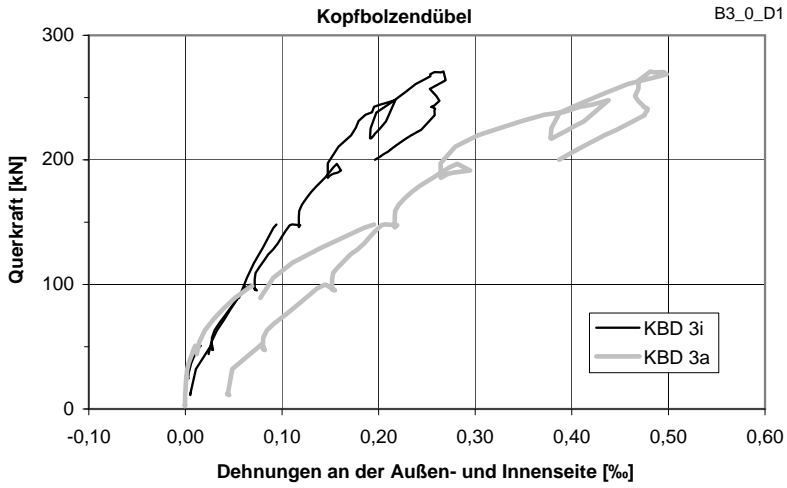
B.26.2. Verformungen

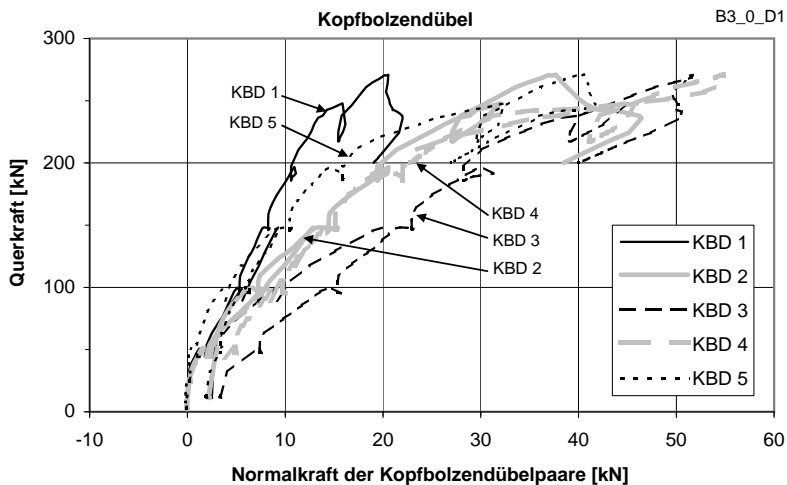
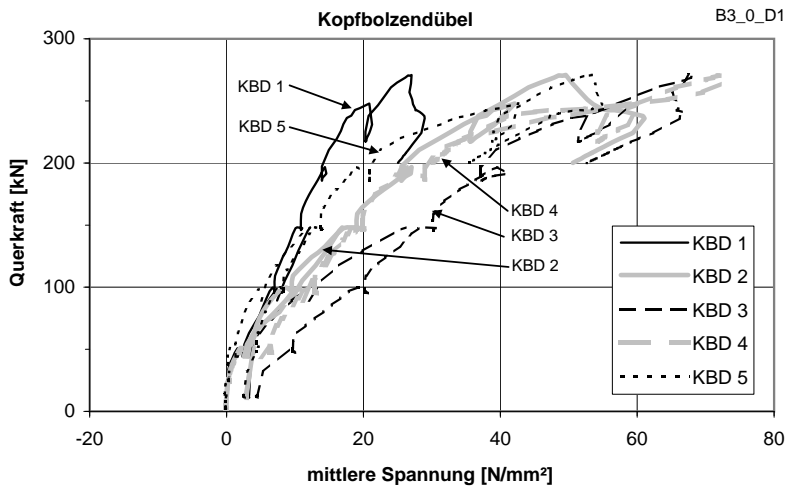
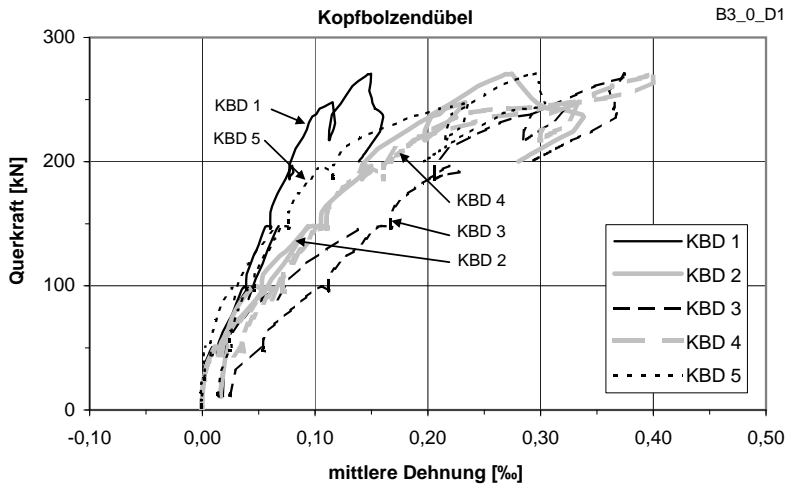




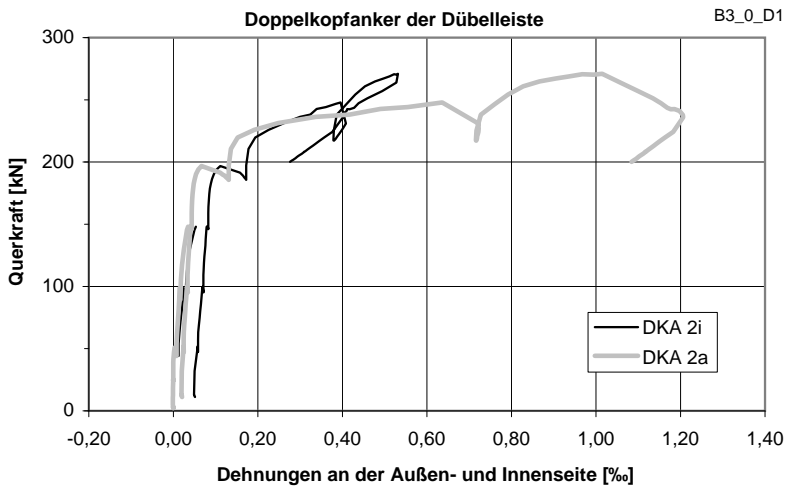
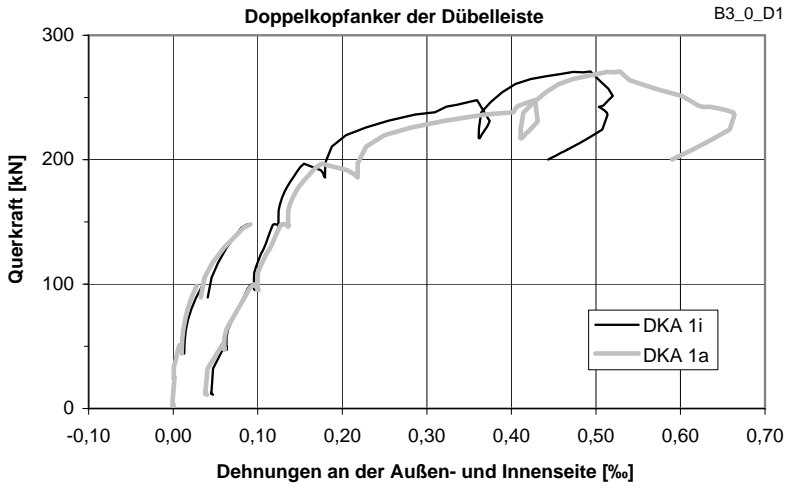
B.26.3. Kopfbolzendübel

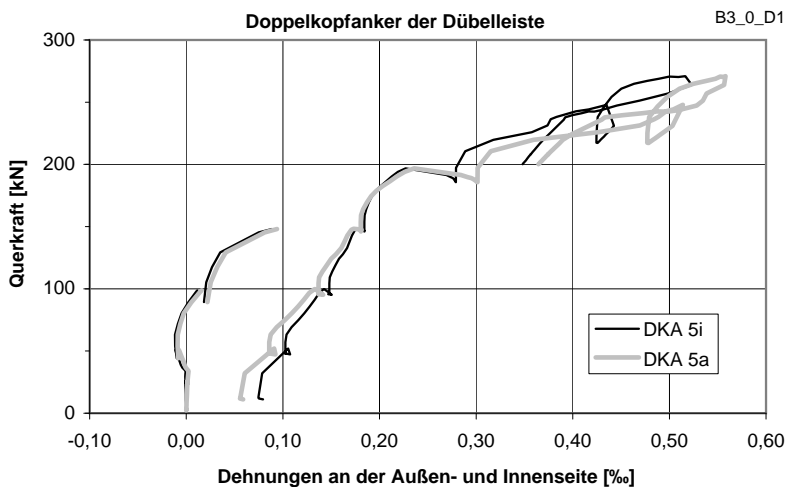
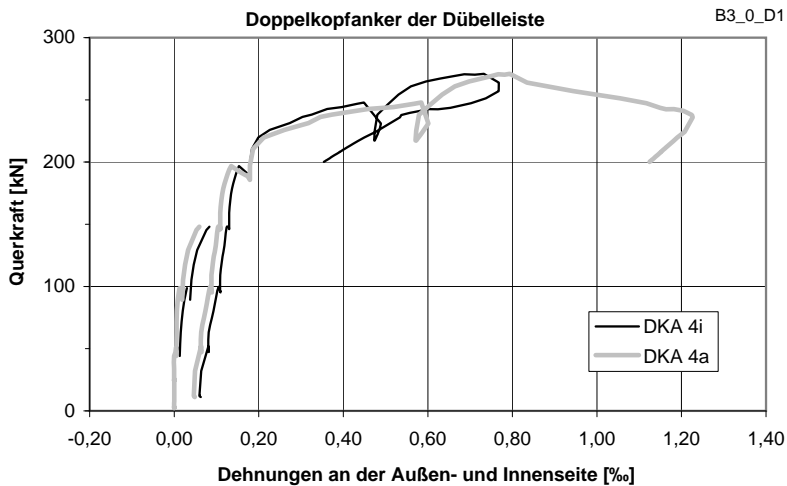
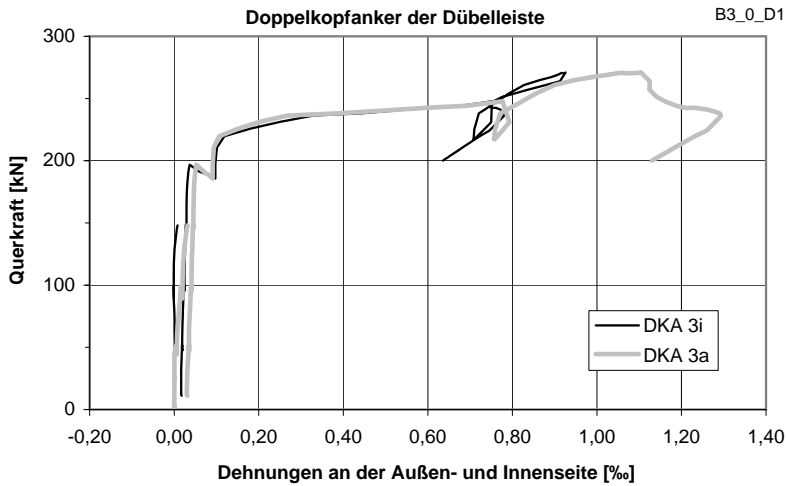


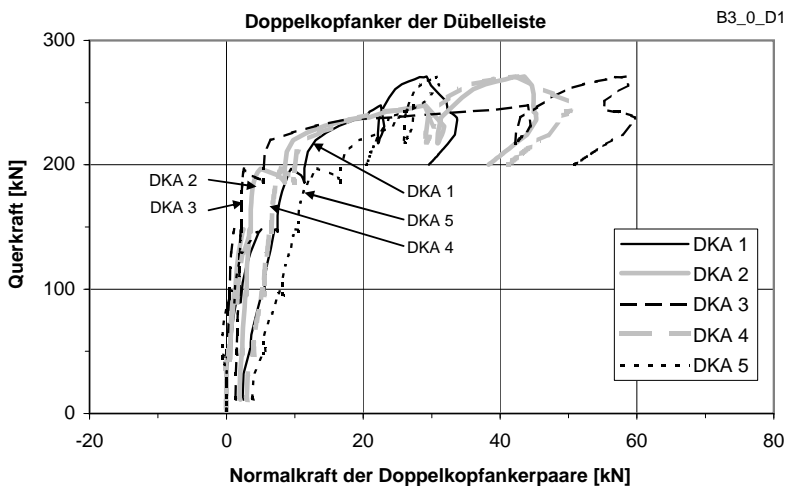
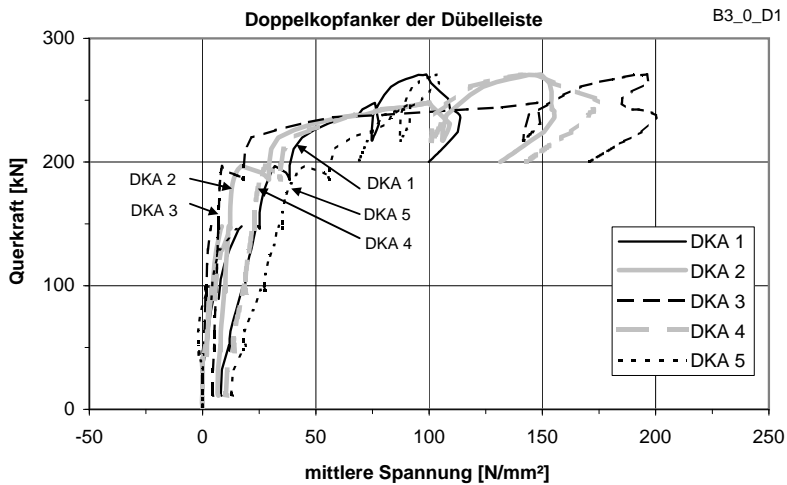
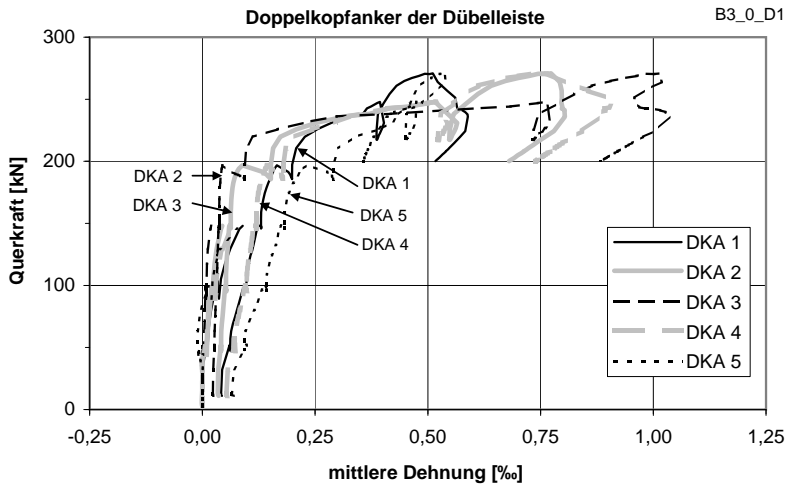




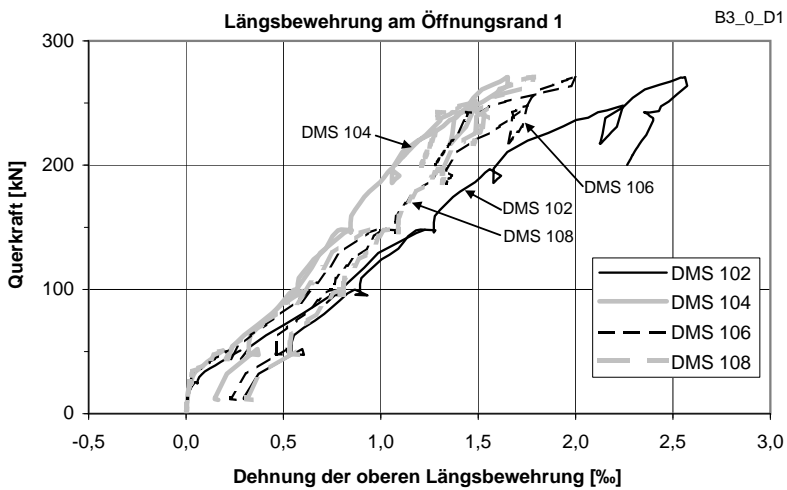
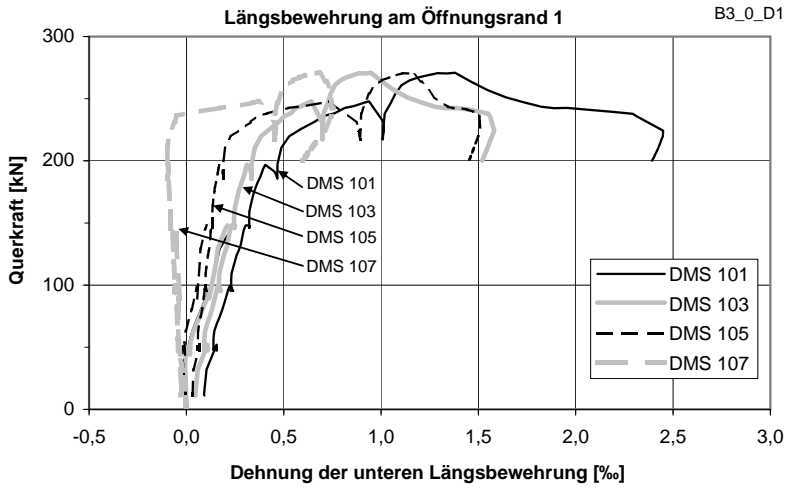
B.26.4. Doppelkopfkanker

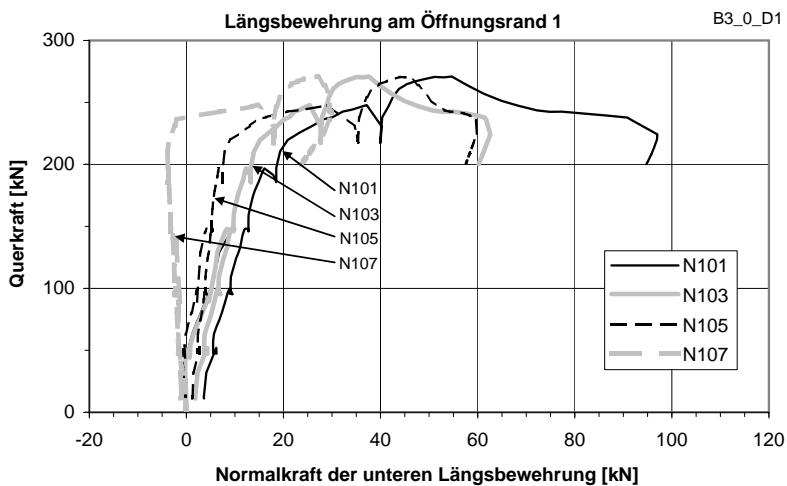
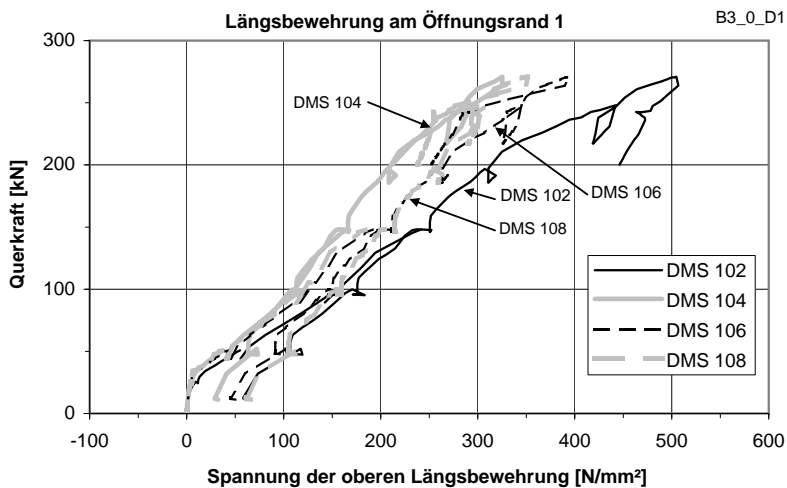
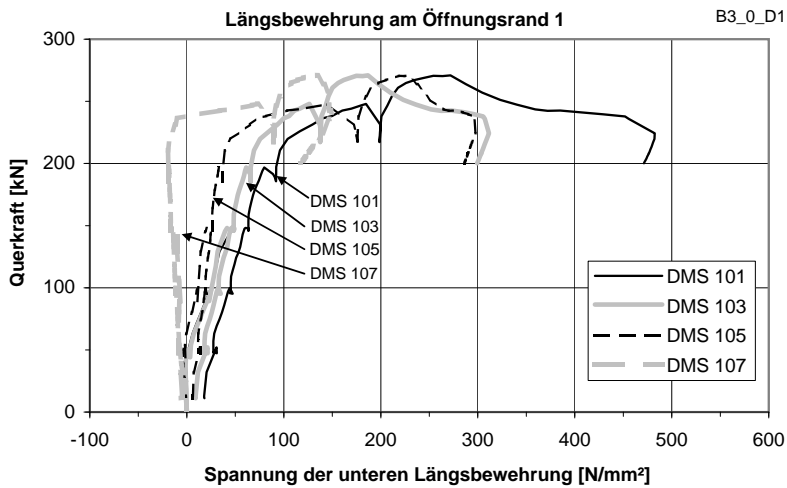


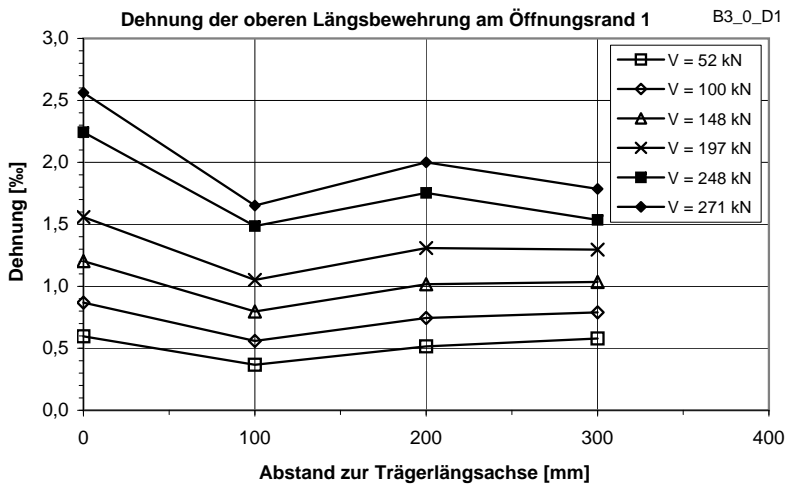
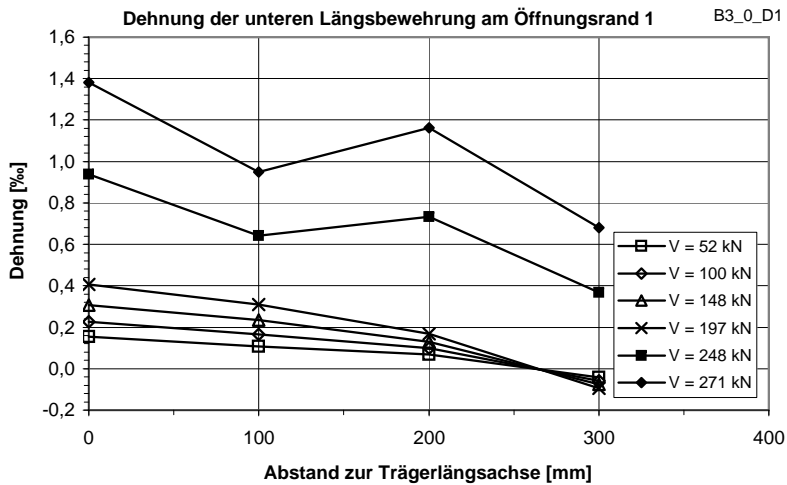
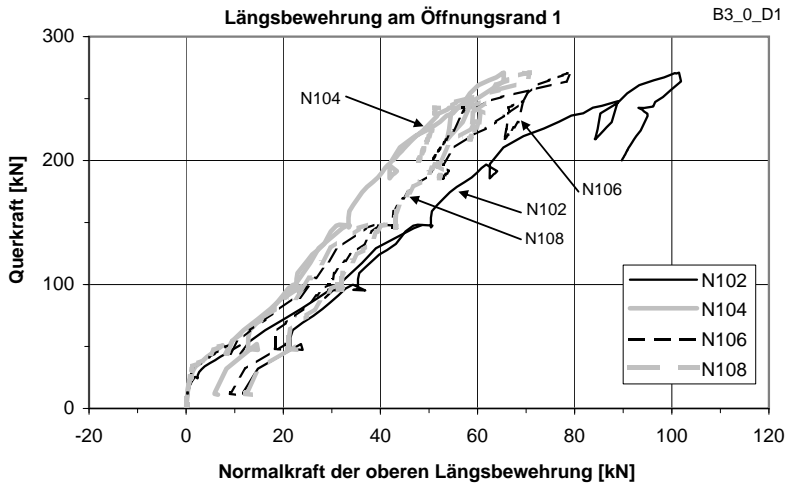


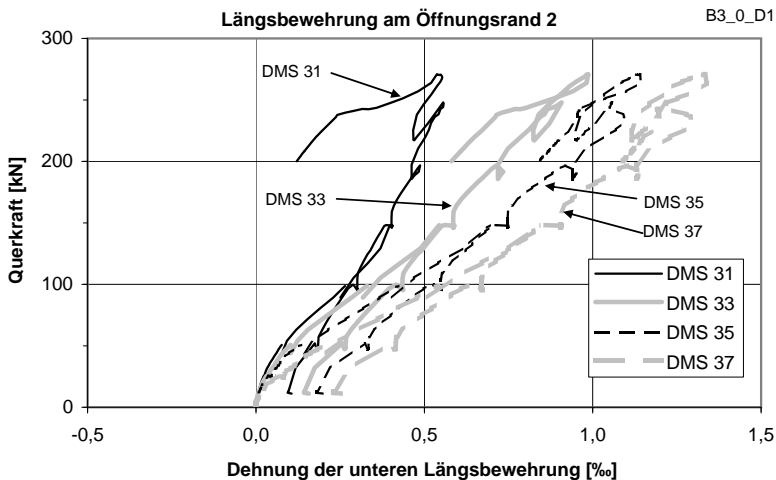
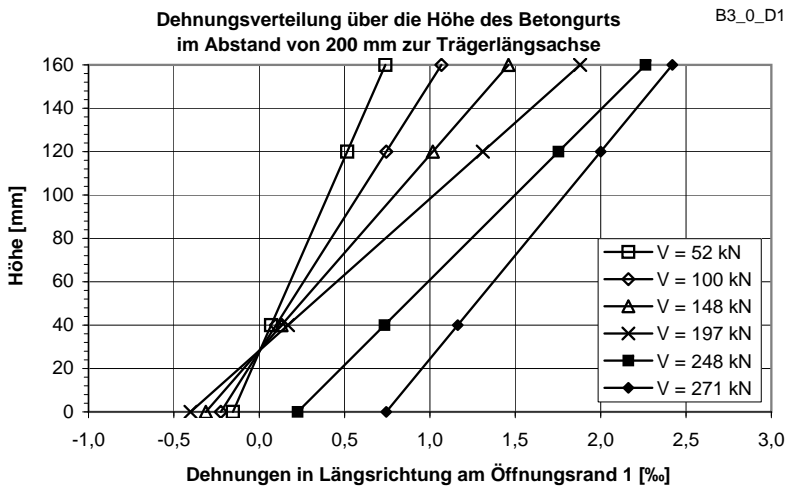
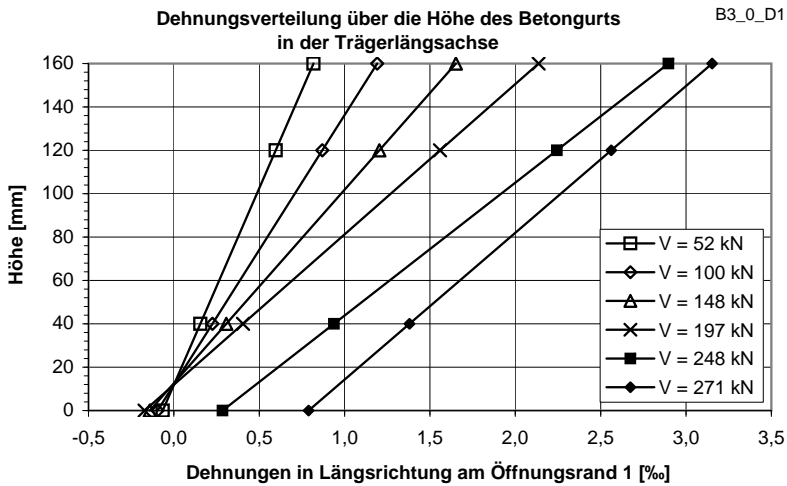


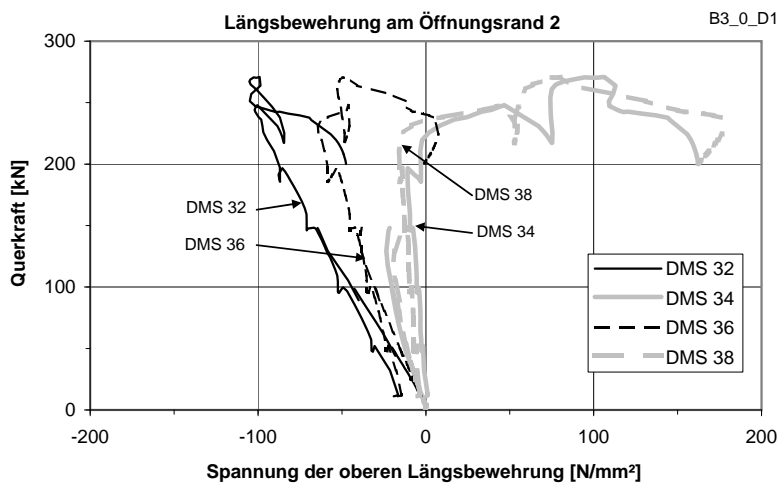
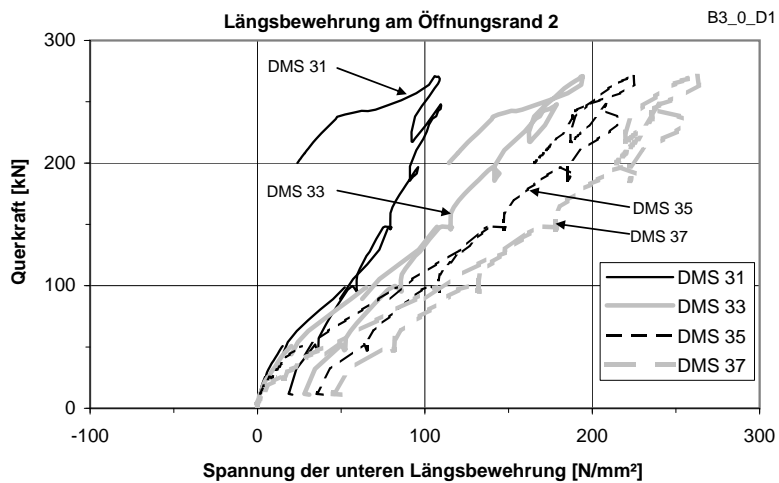
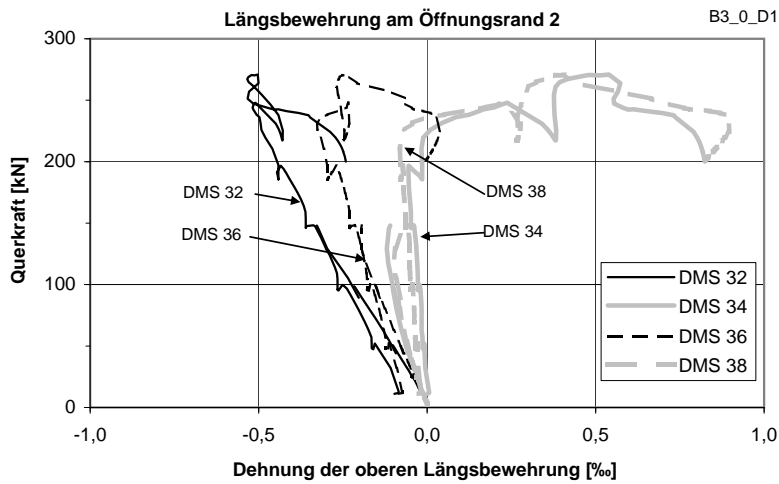
B.26.5. Längsbewehrung

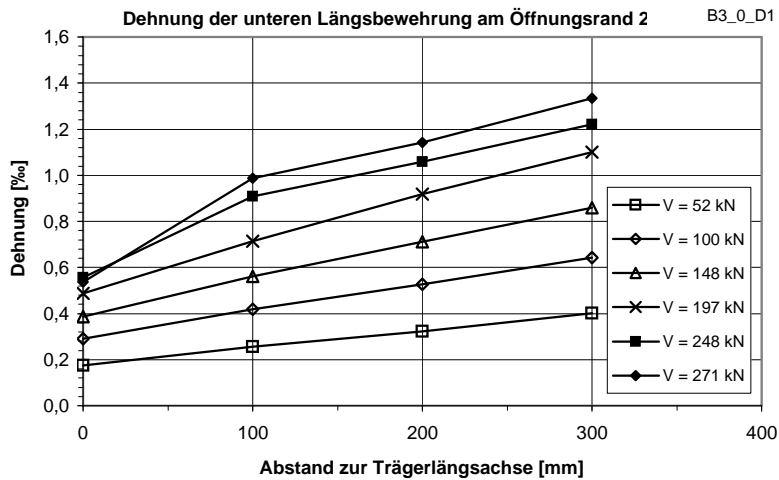
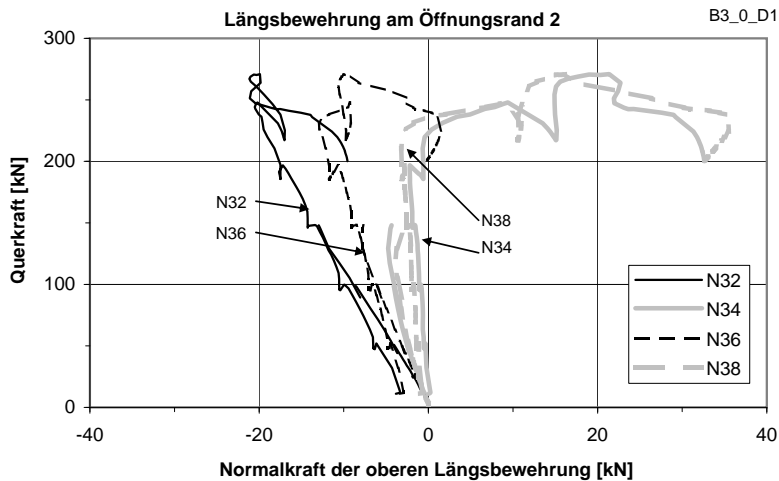
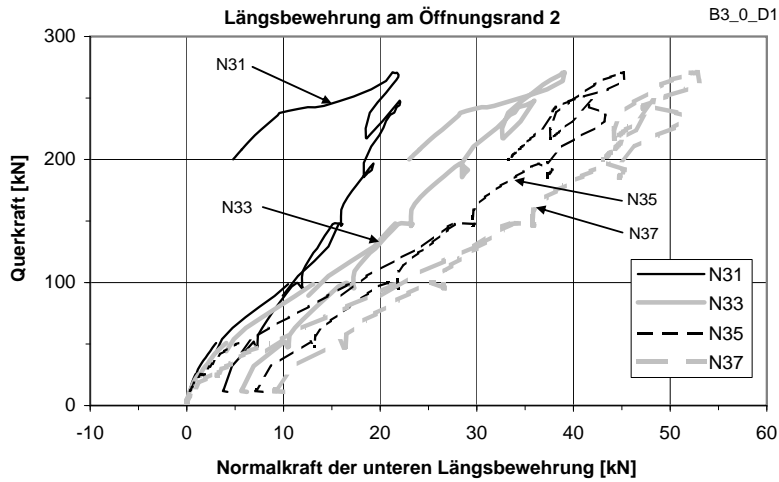


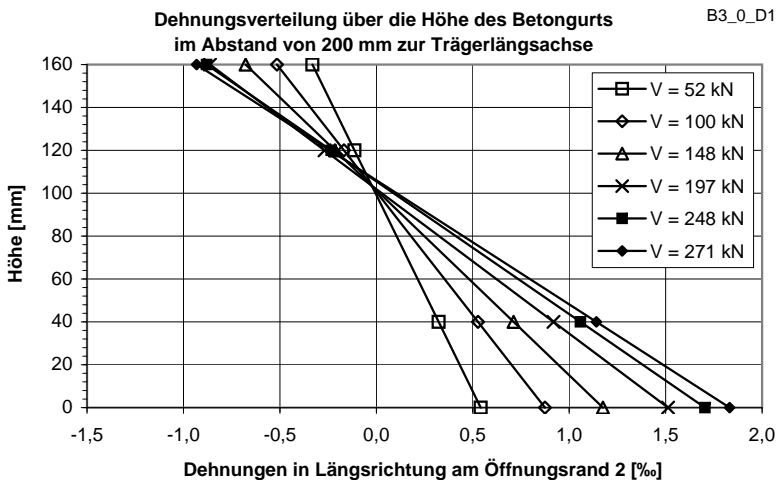
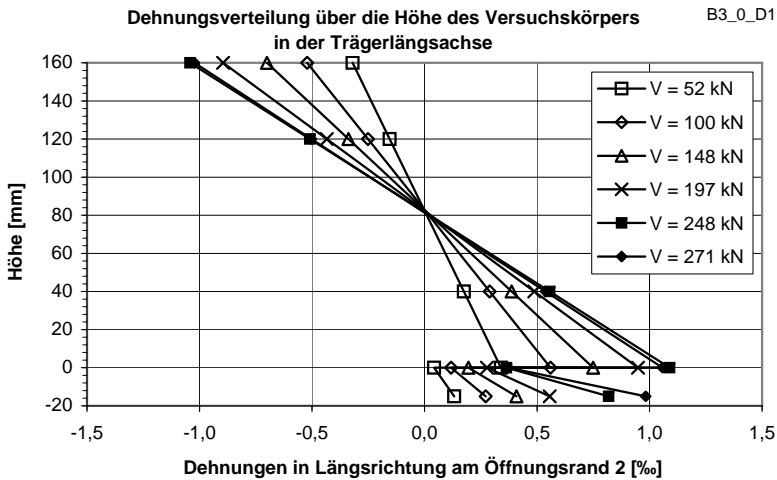
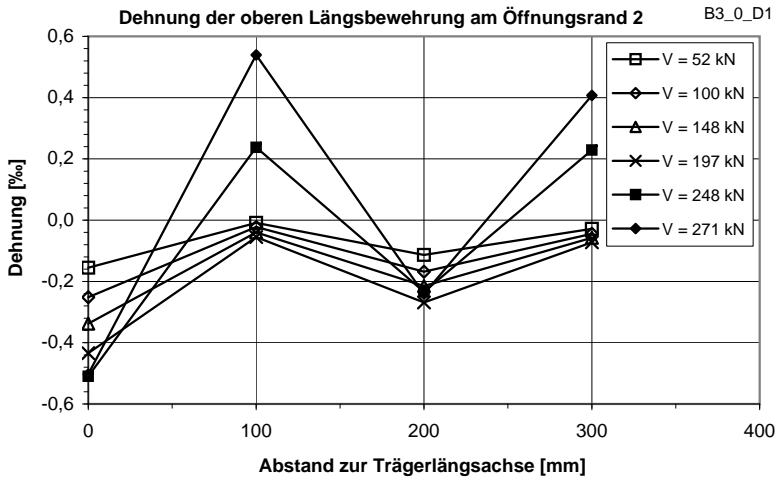




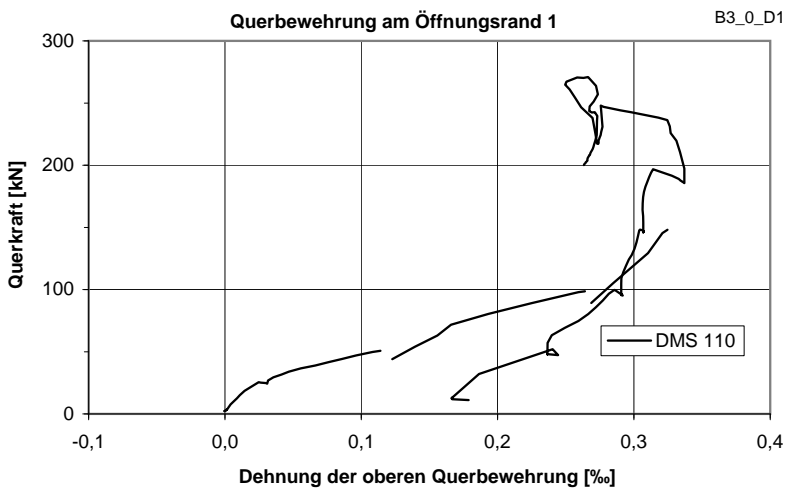
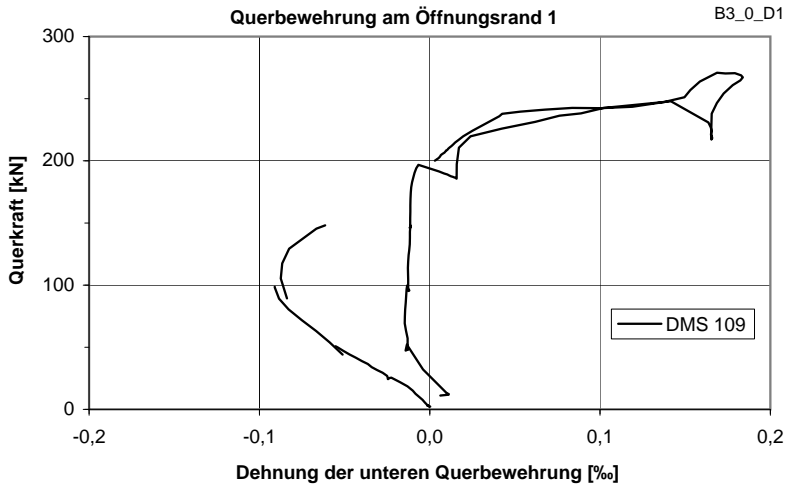


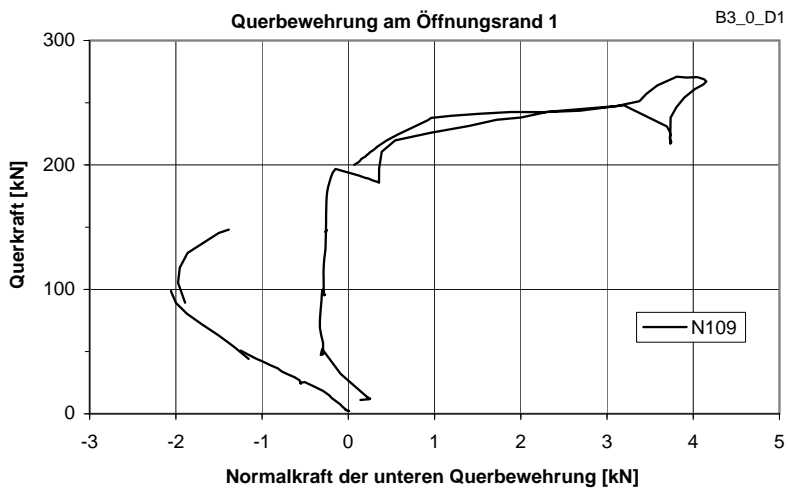
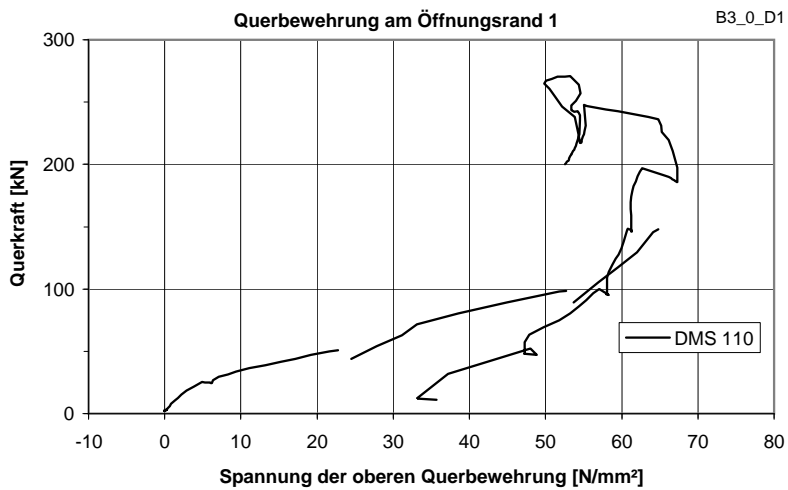
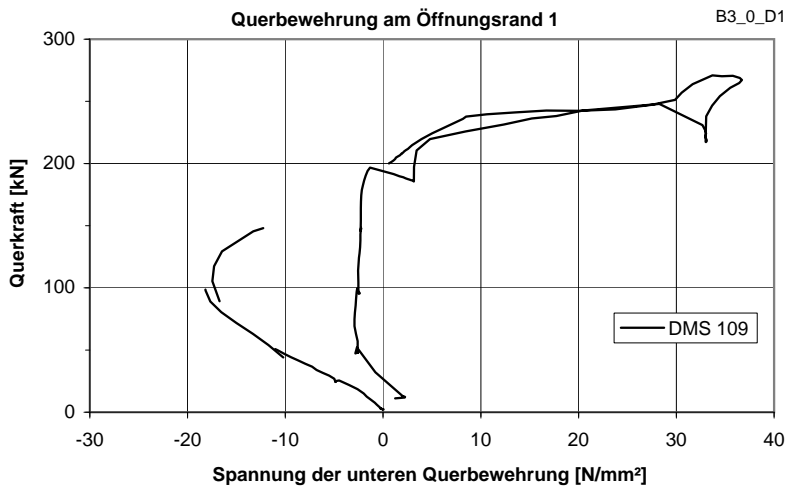


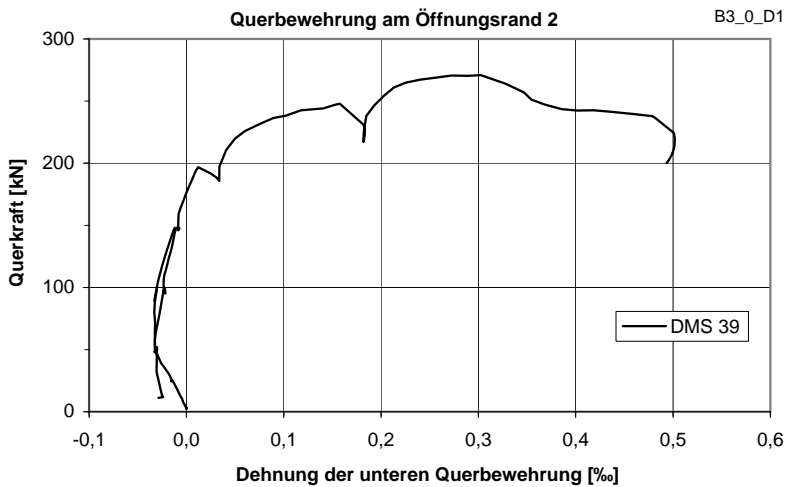
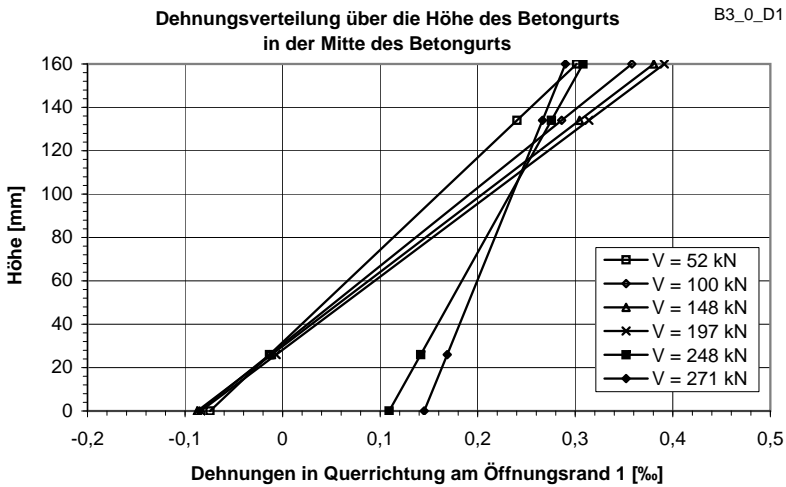
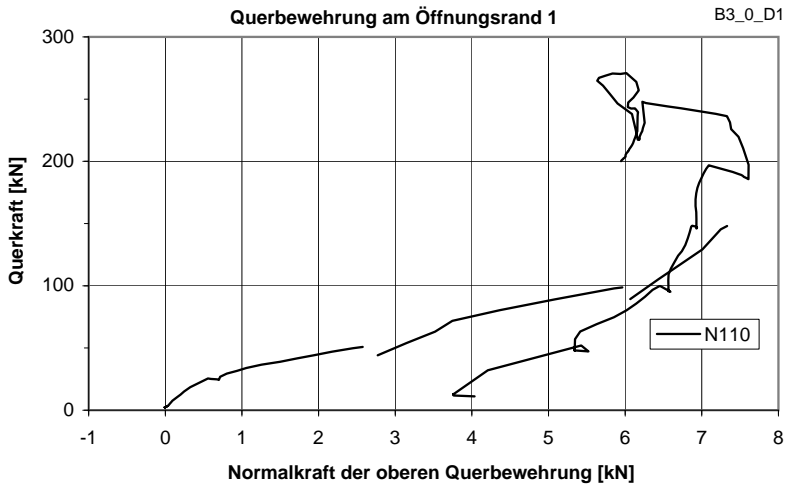


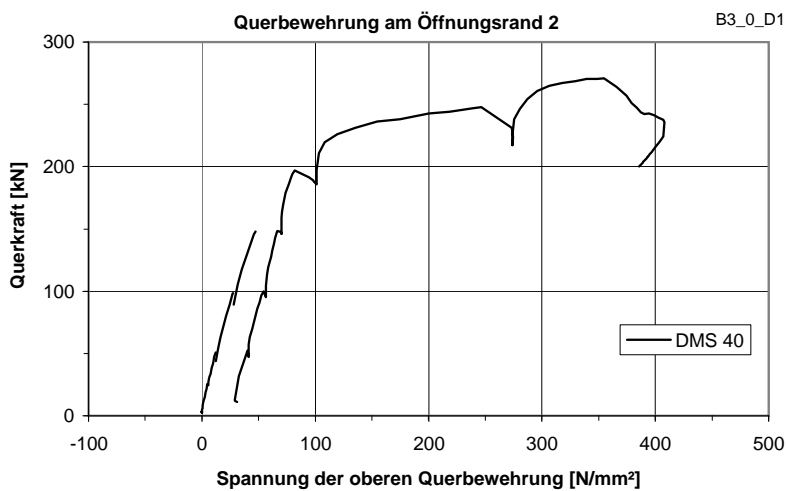
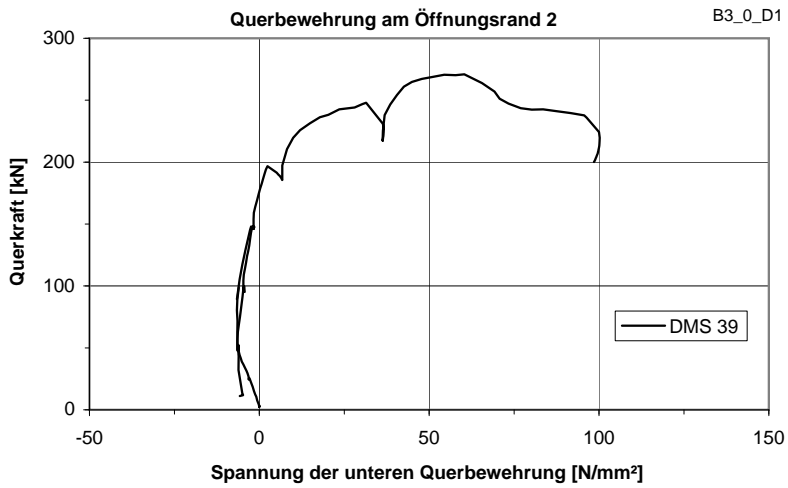
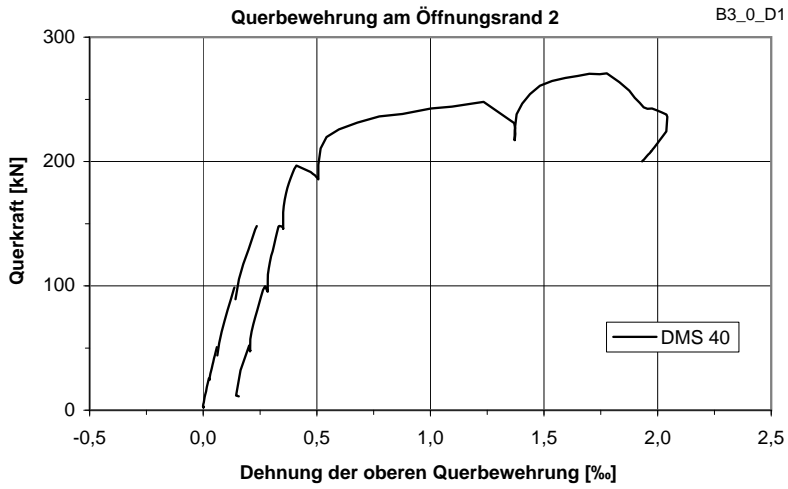


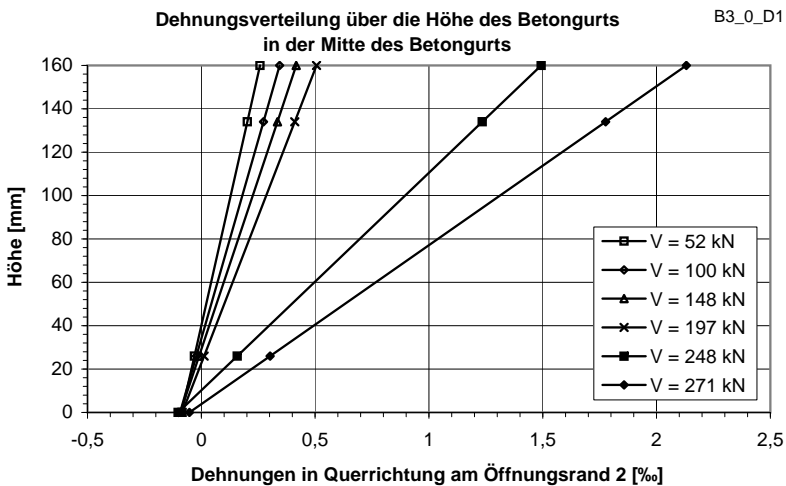
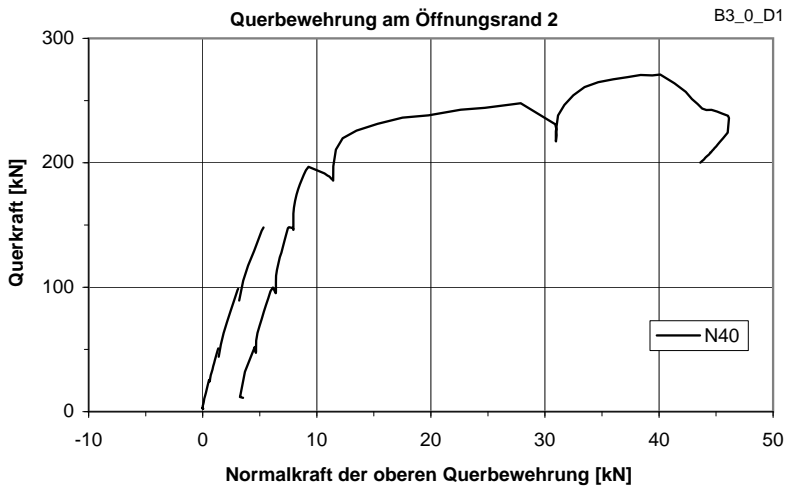
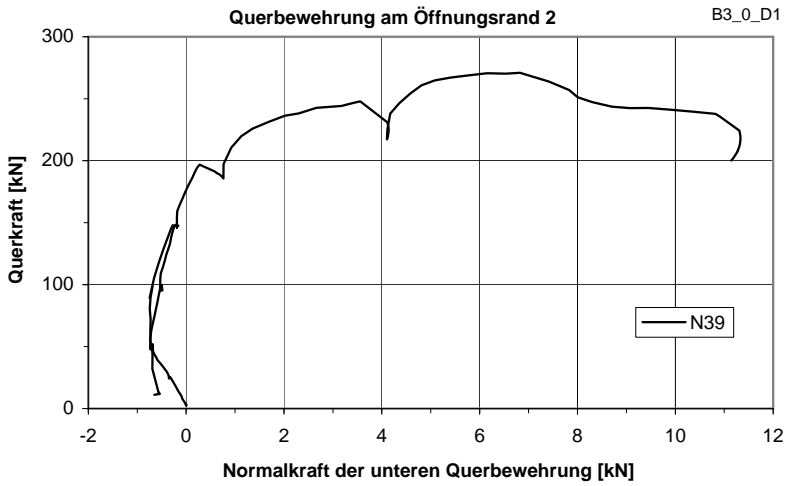
B.26.6. Querbewehrung



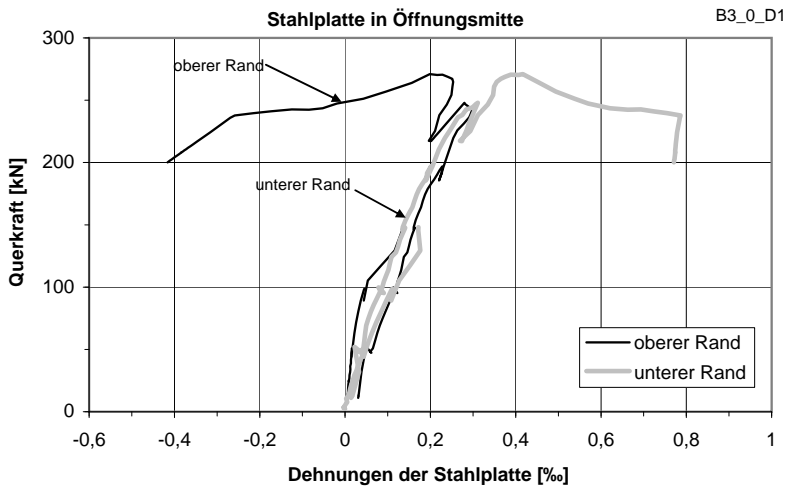
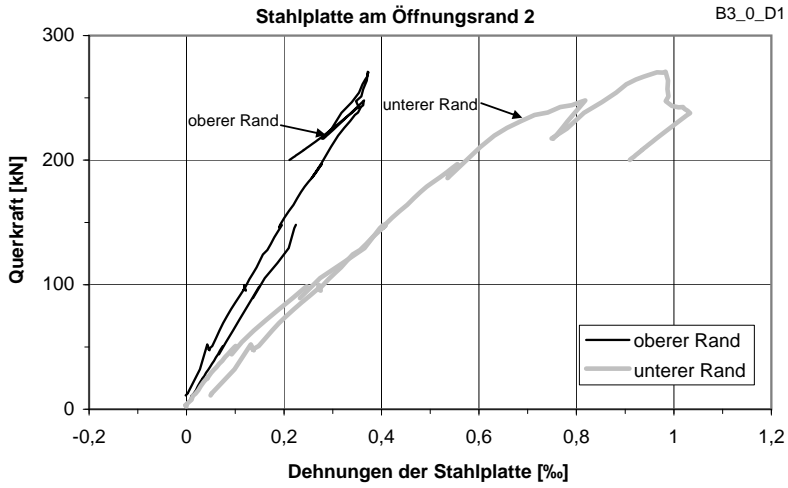


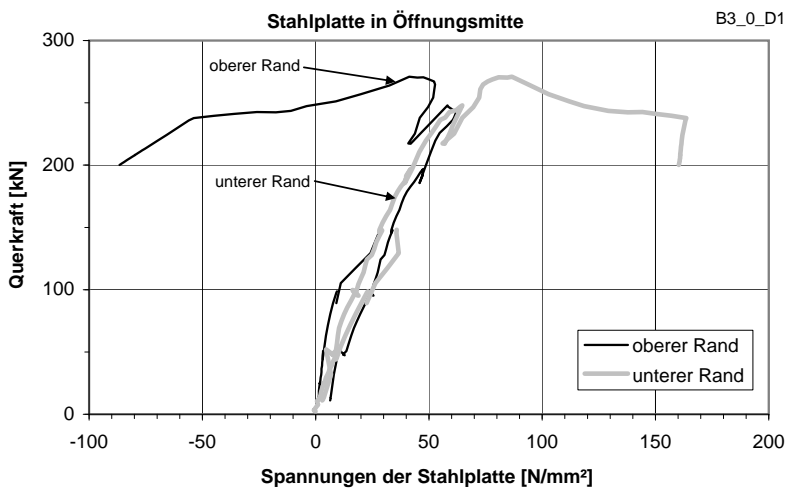
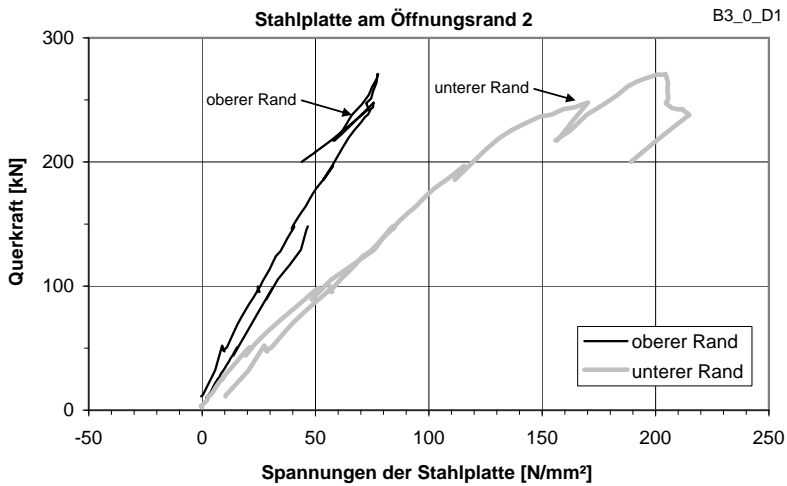
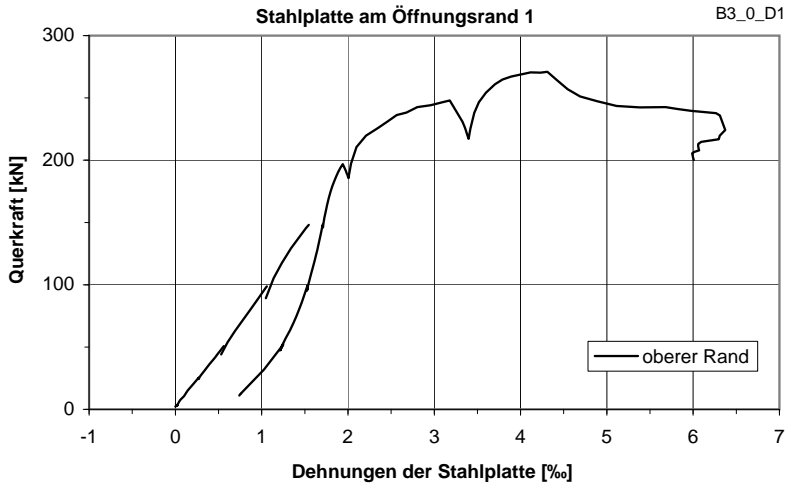


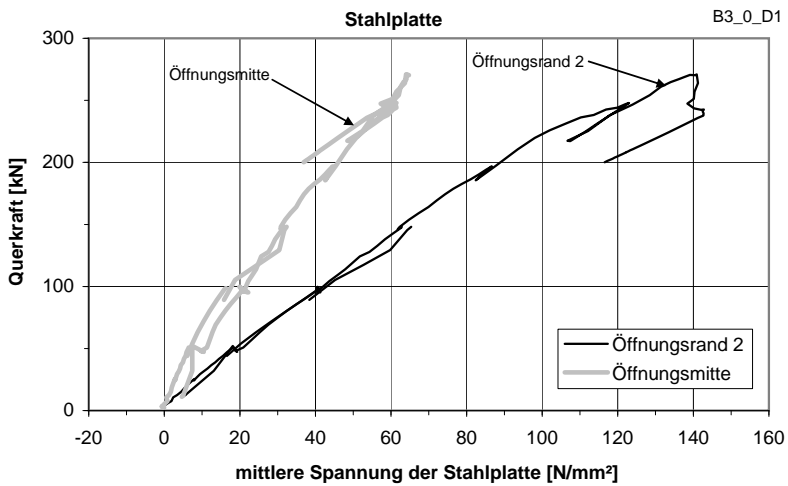
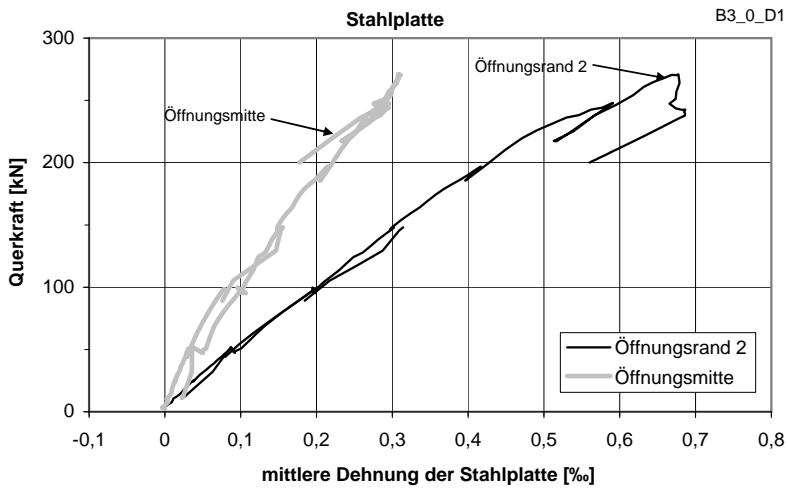
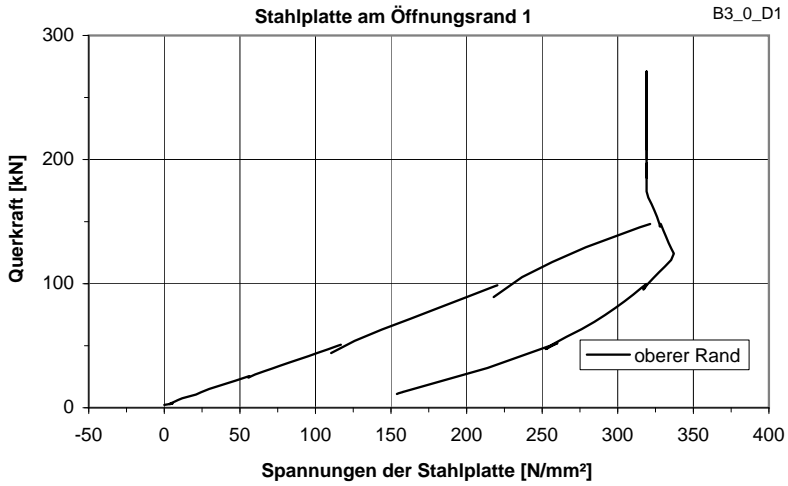


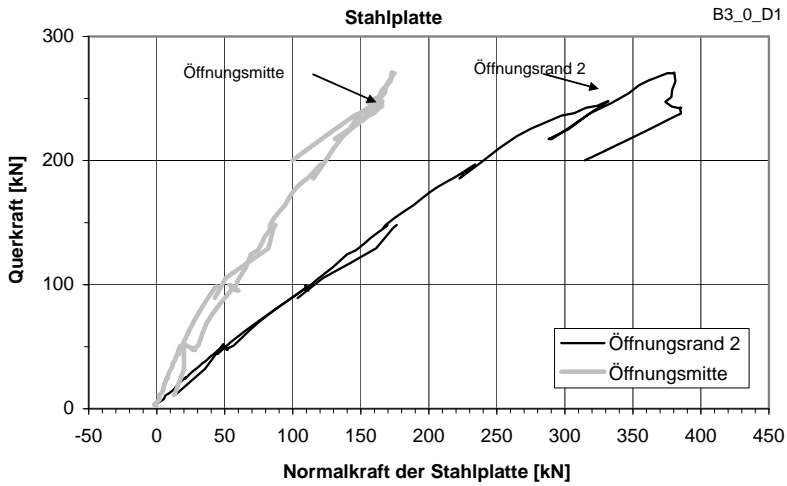


B.26.7. Stahlplatte

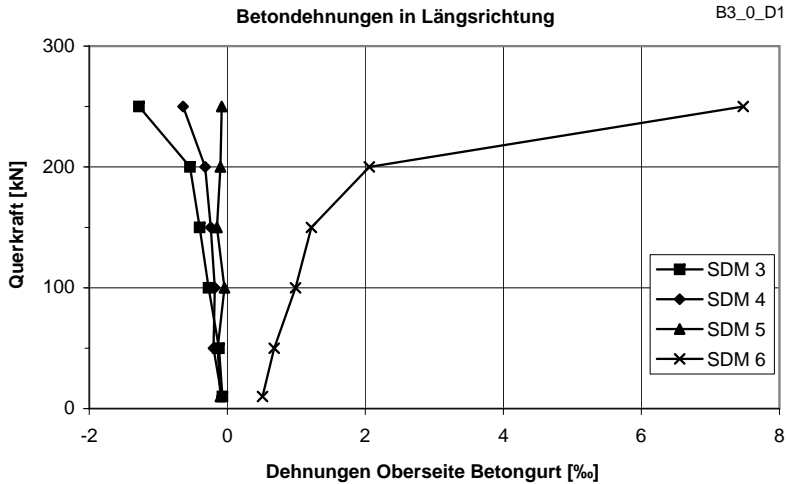


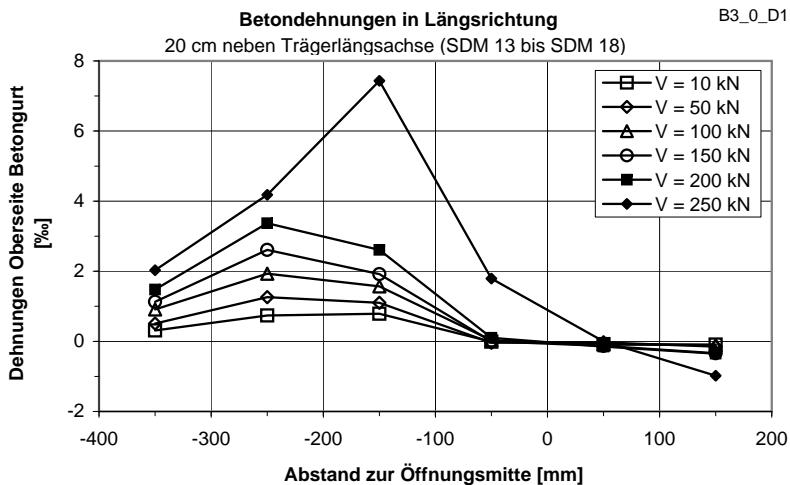
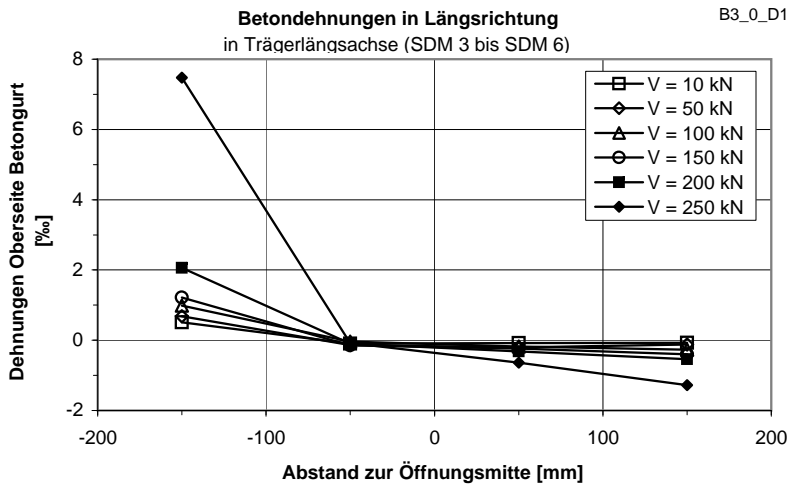
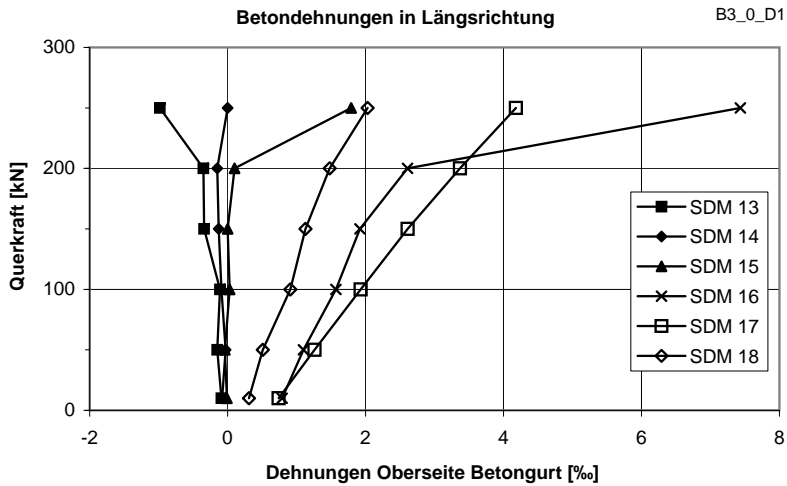


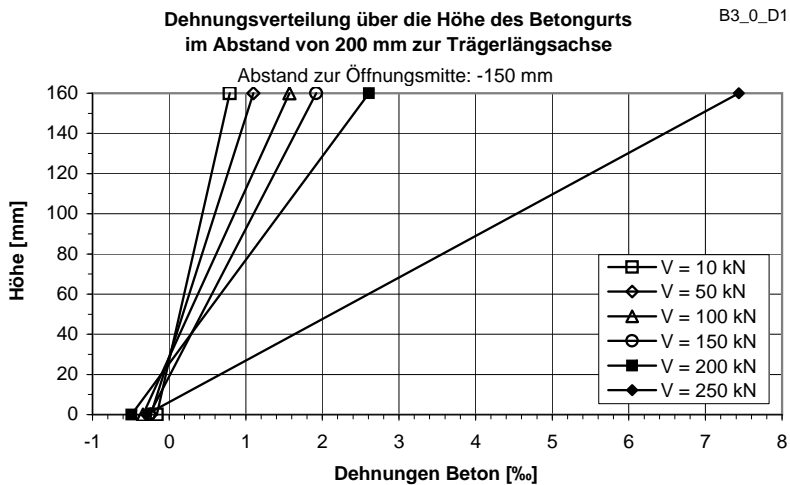
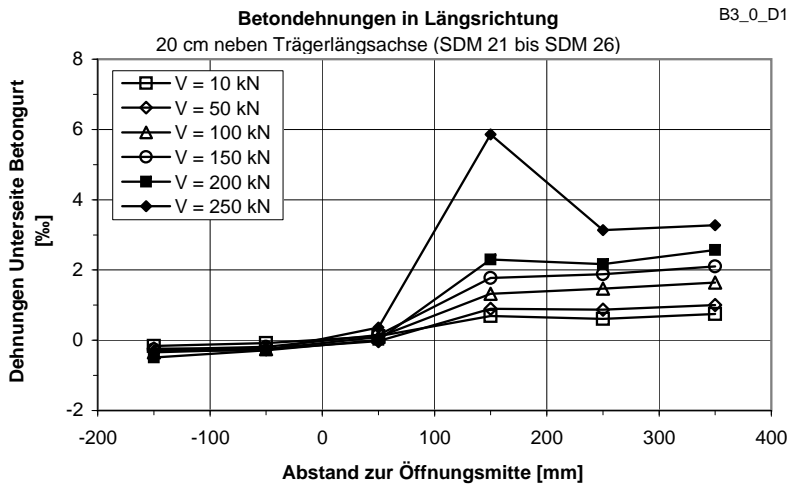
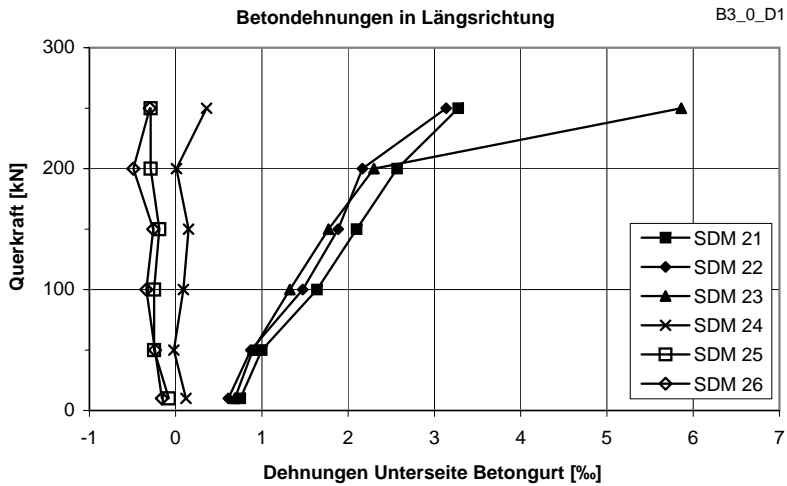


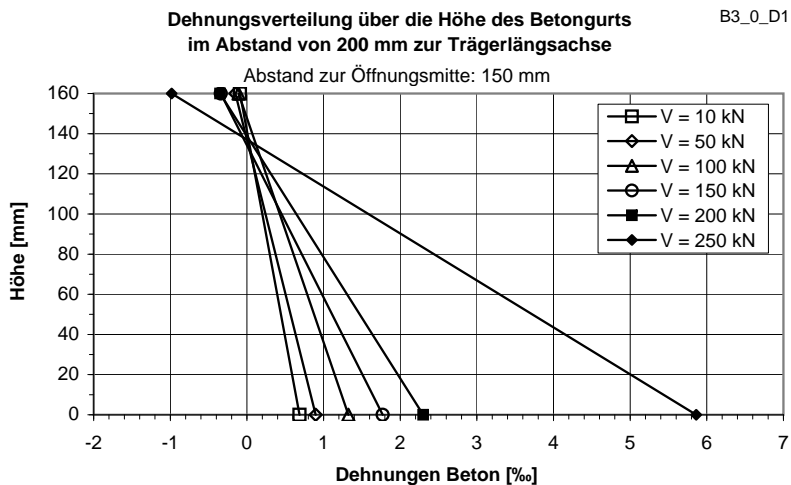
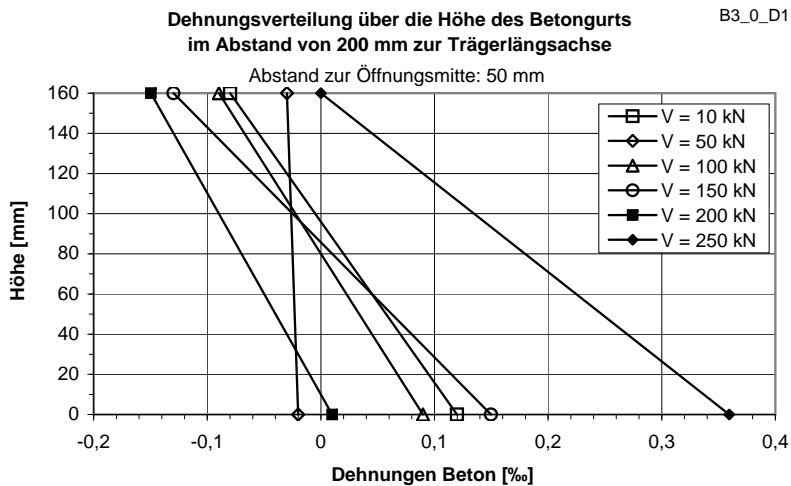
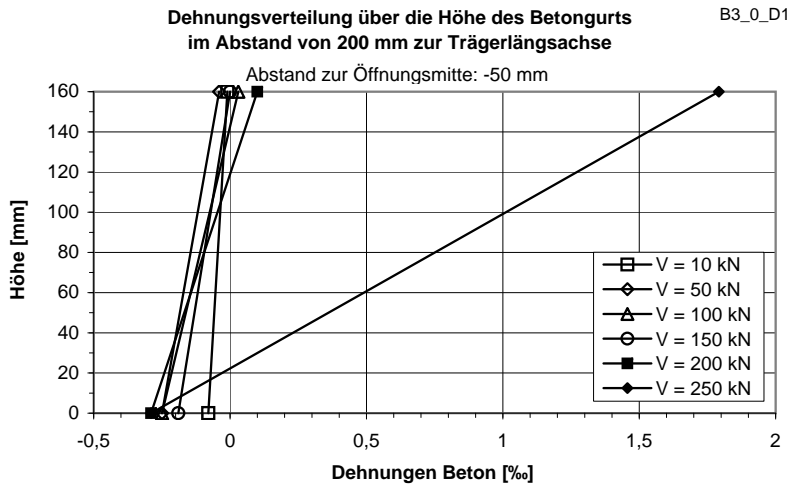


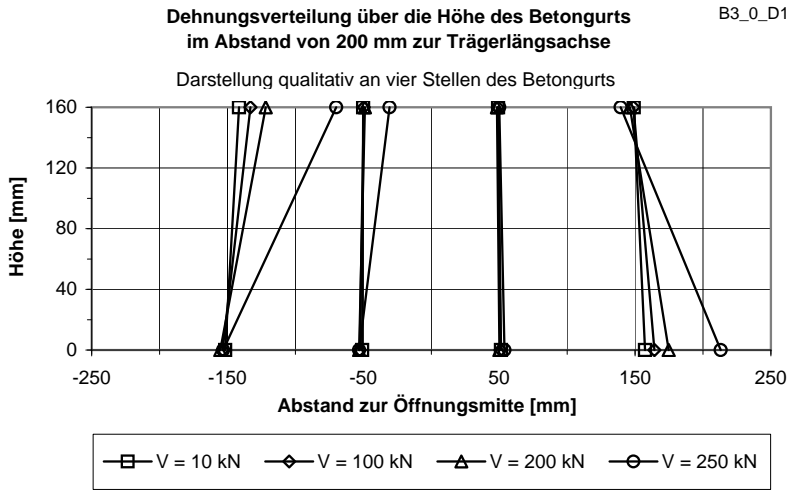
B.26.8. Betondehnungen





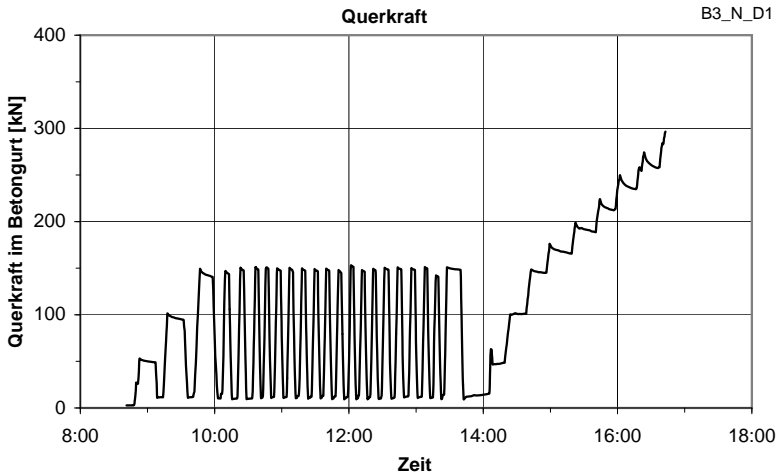


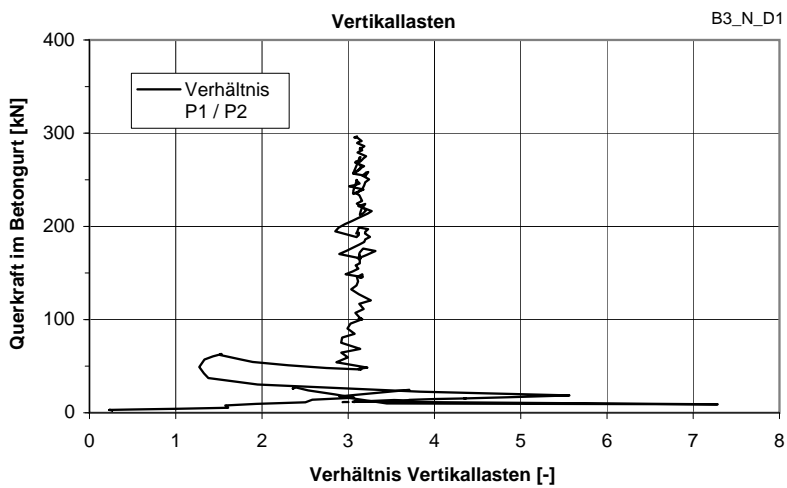
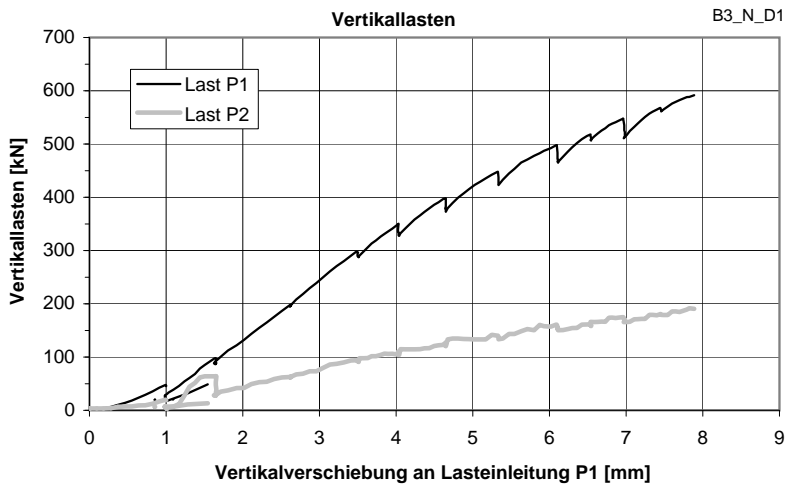
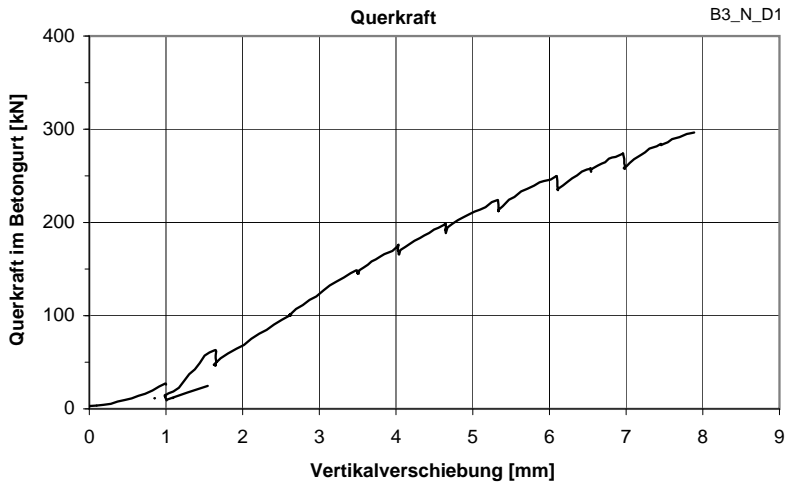


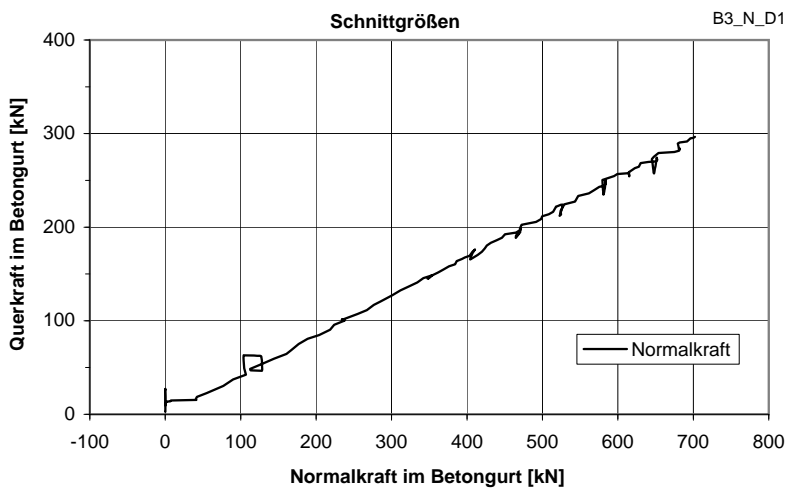
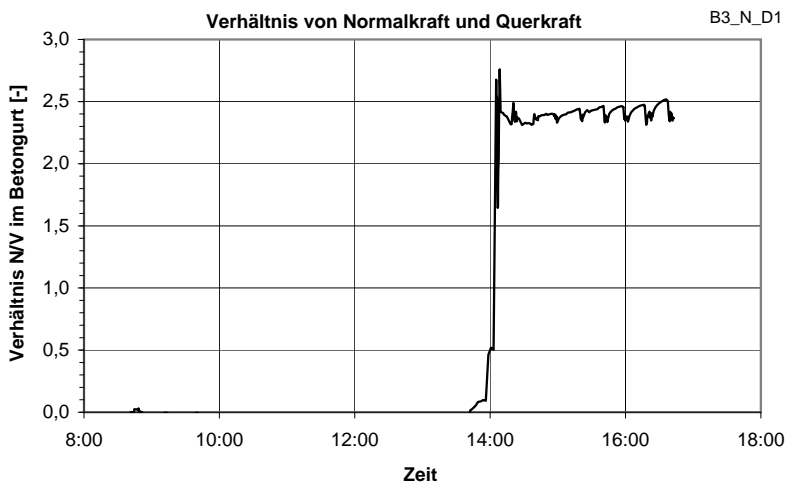
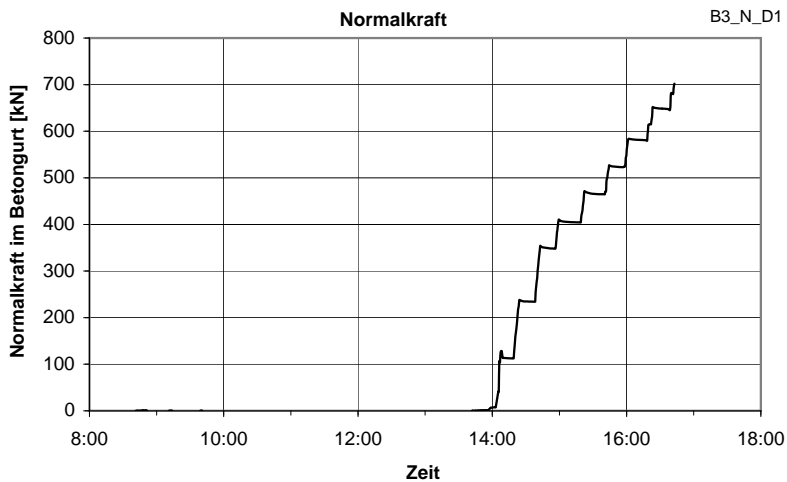


B.27. Versuch B3_N_D1

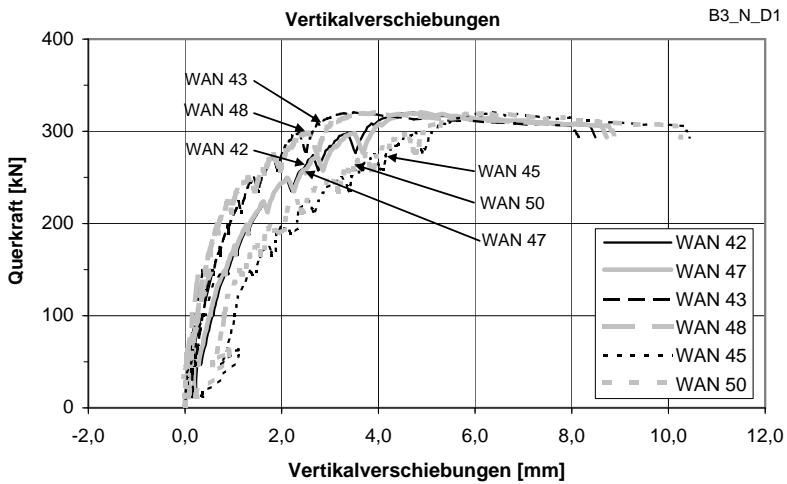
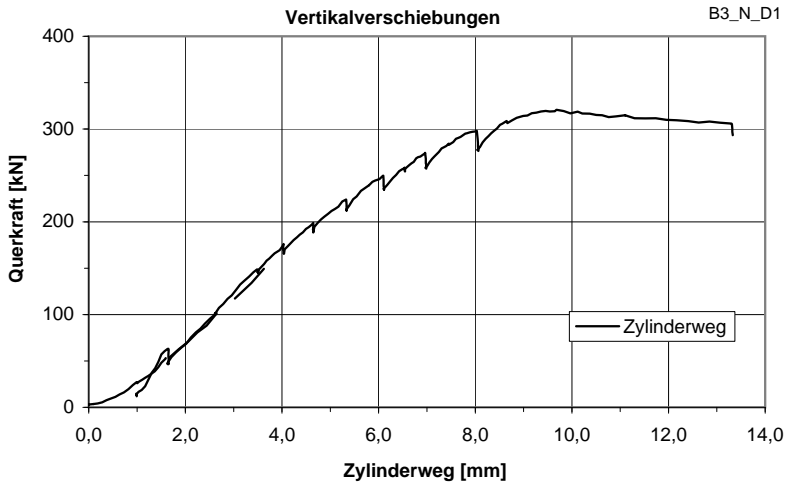
B.27.1. Kräfte

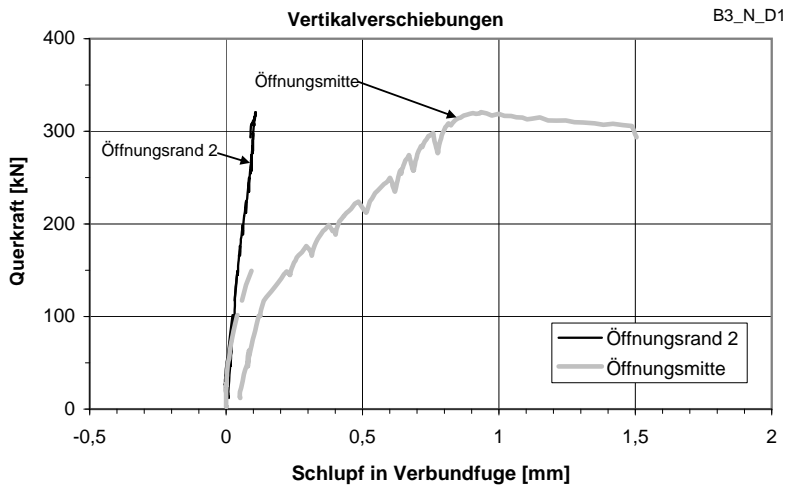
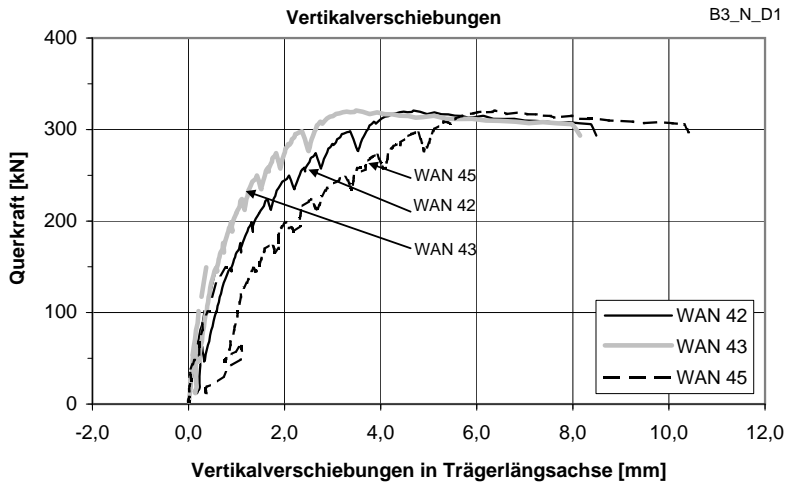




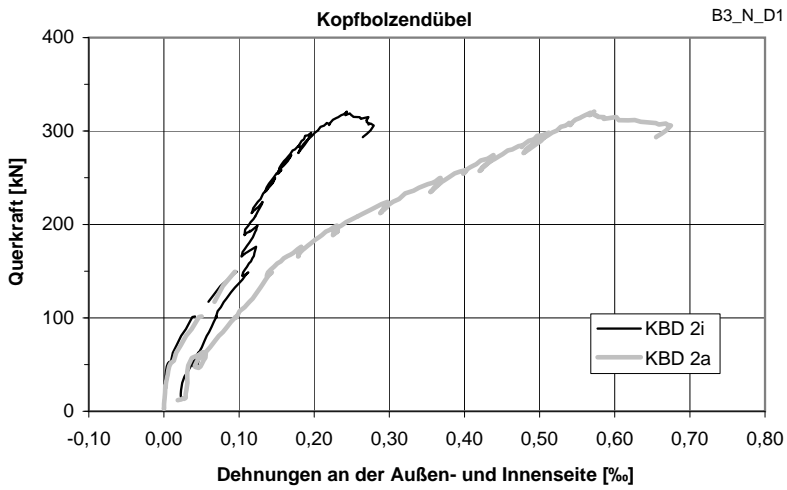
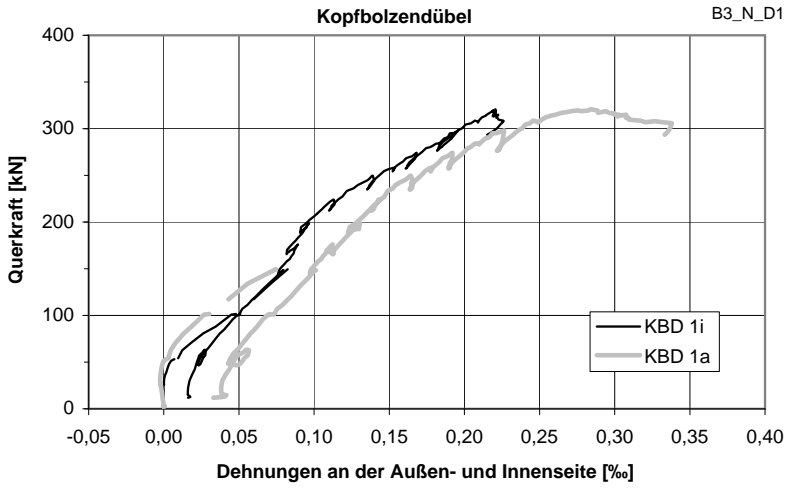


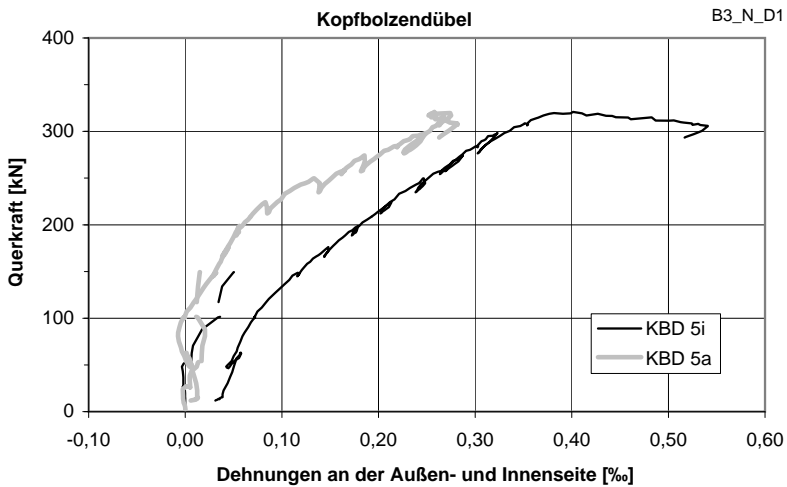
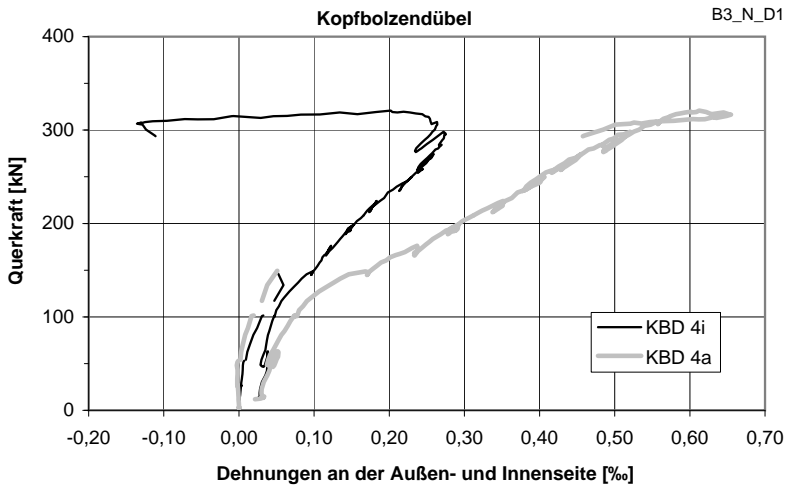
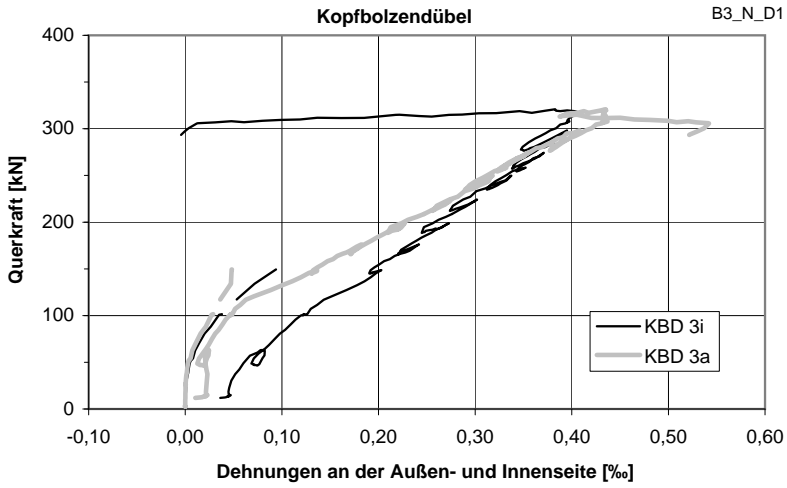
B.27.2. Verformungen

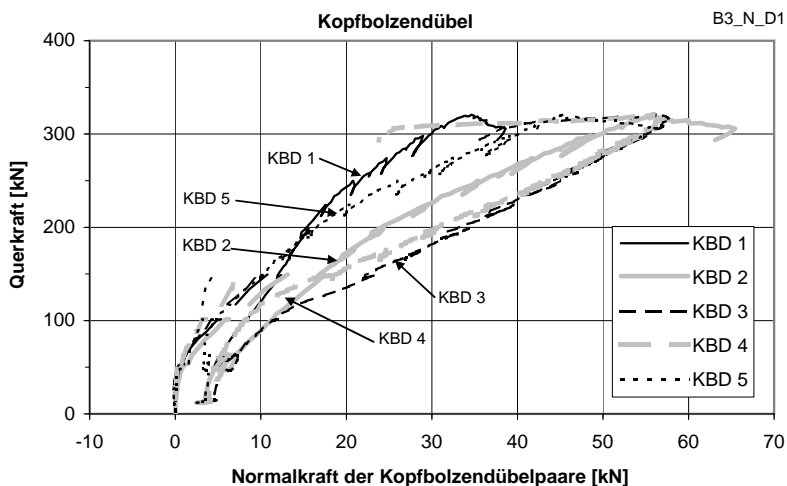
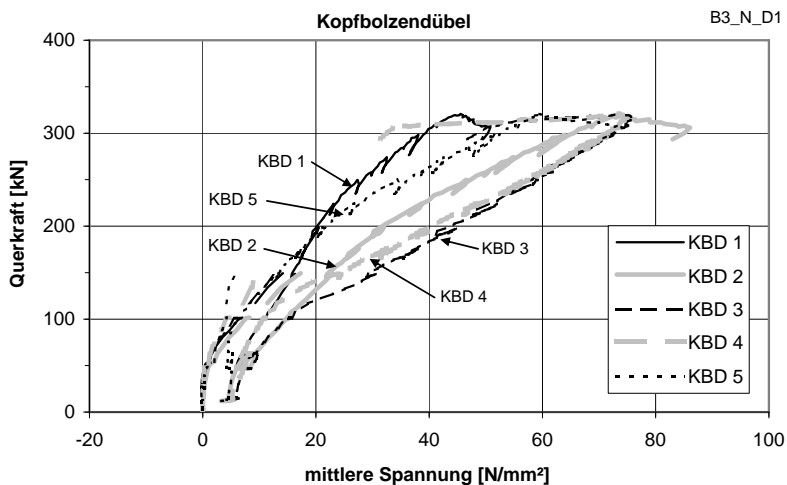
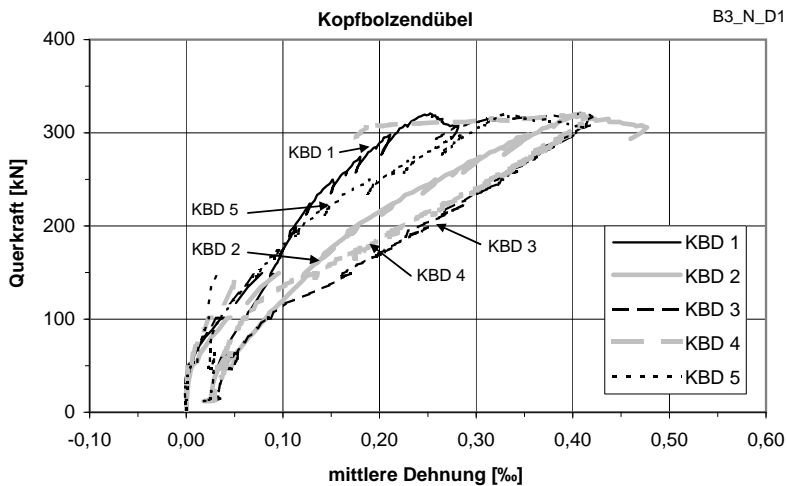




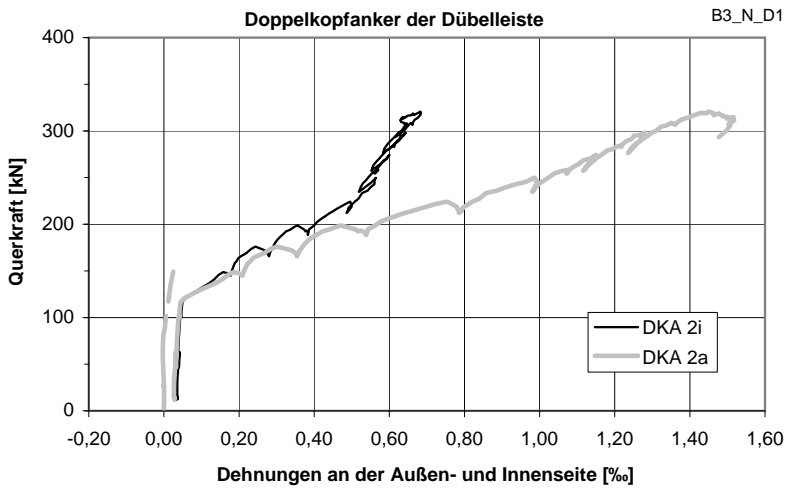
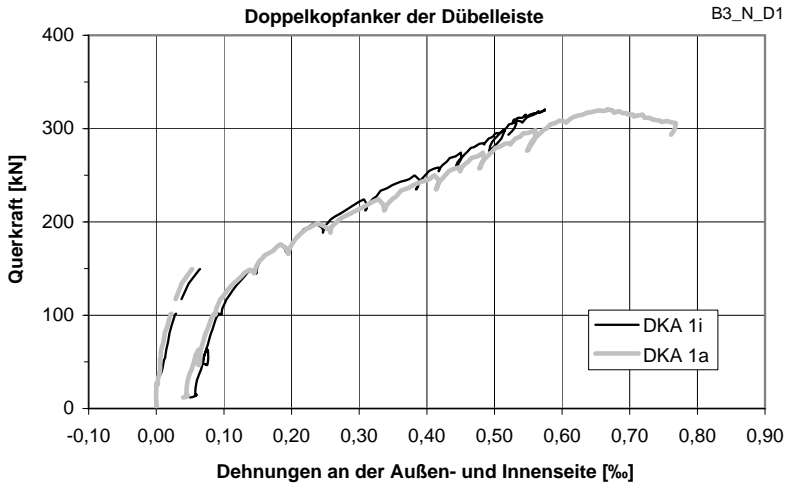
B.27.3. Kopfbolzendübel

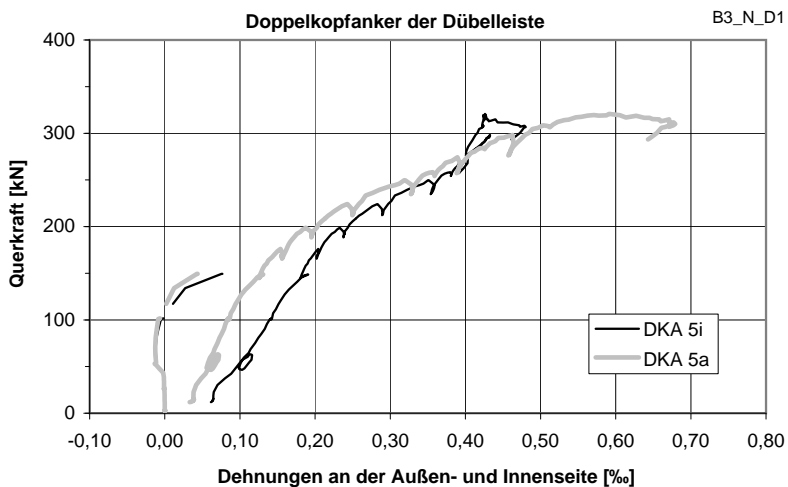
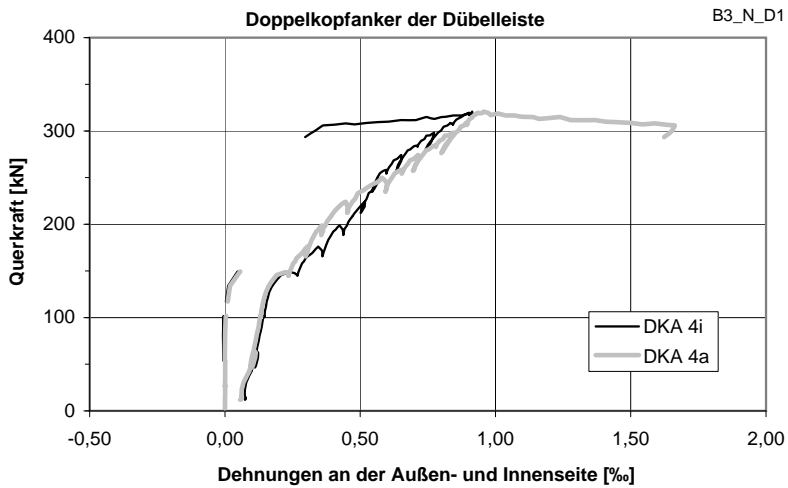
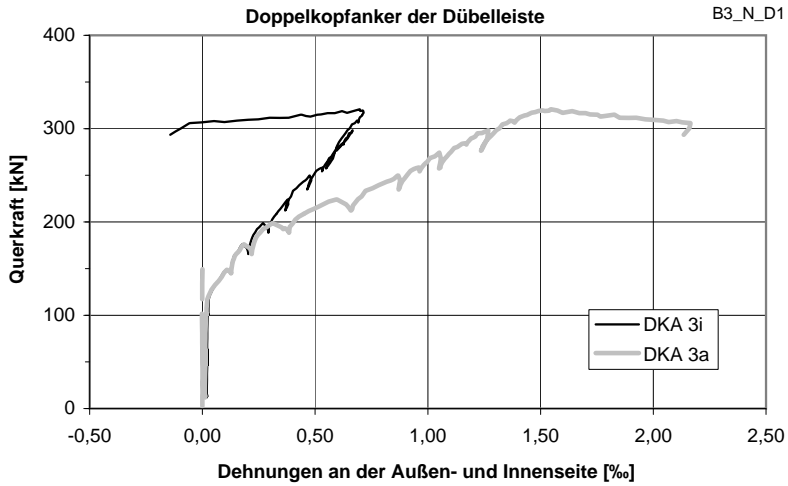


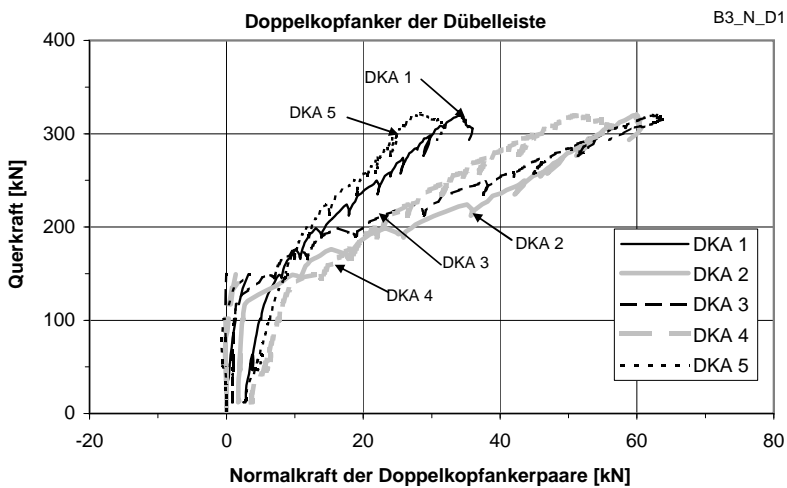
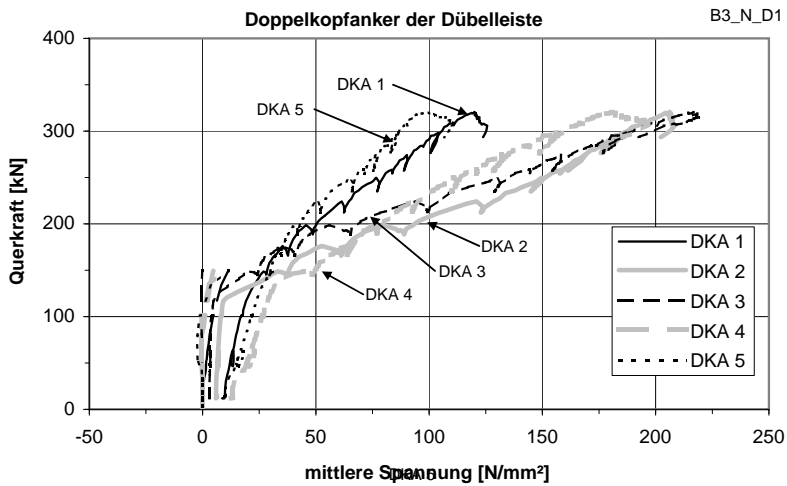
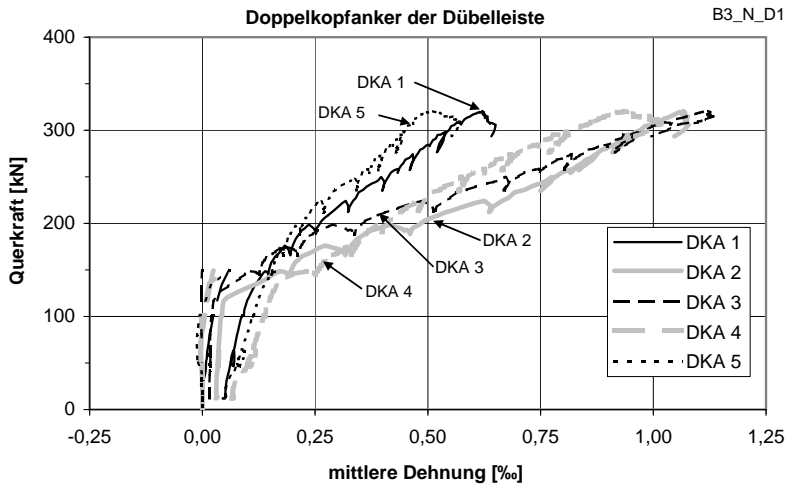




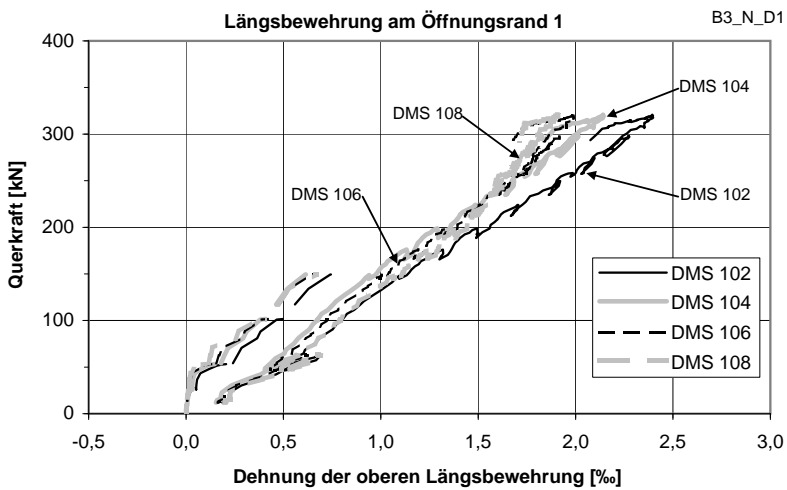
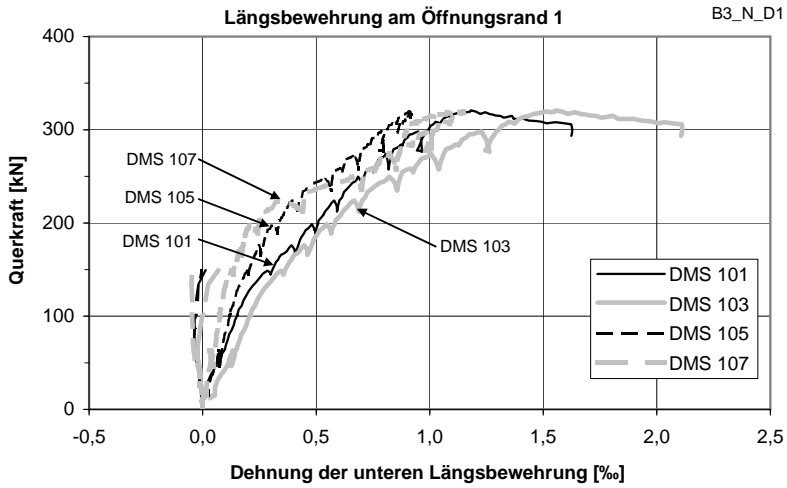
B.27.4. Doppelkopfanker

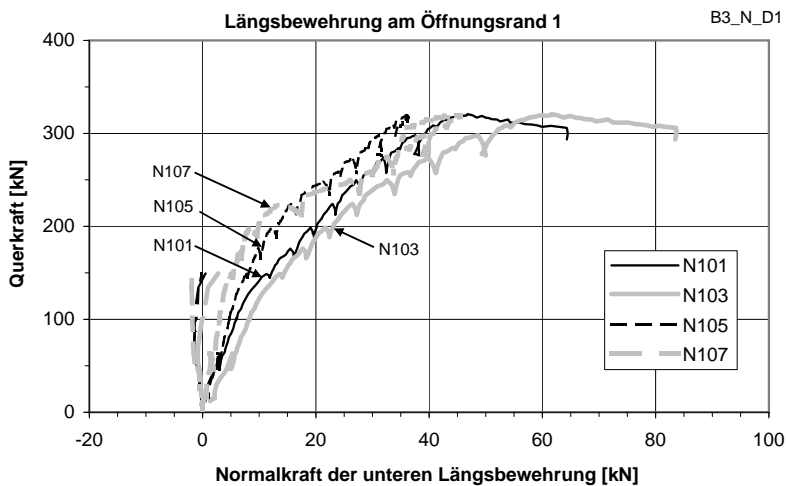
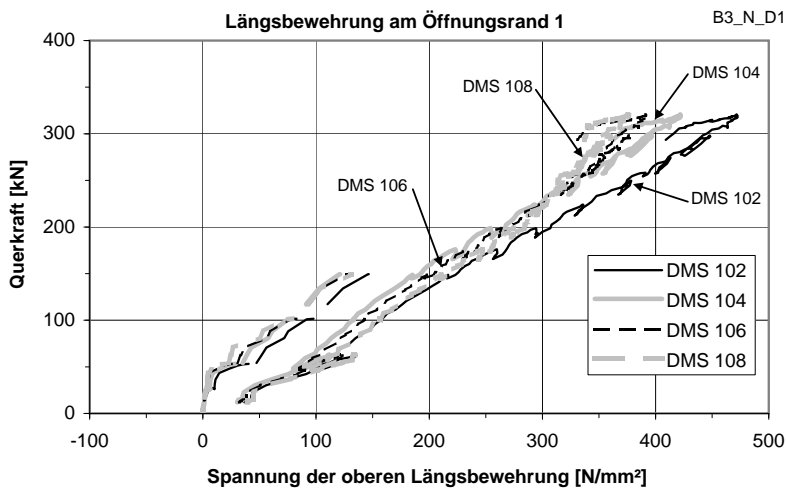
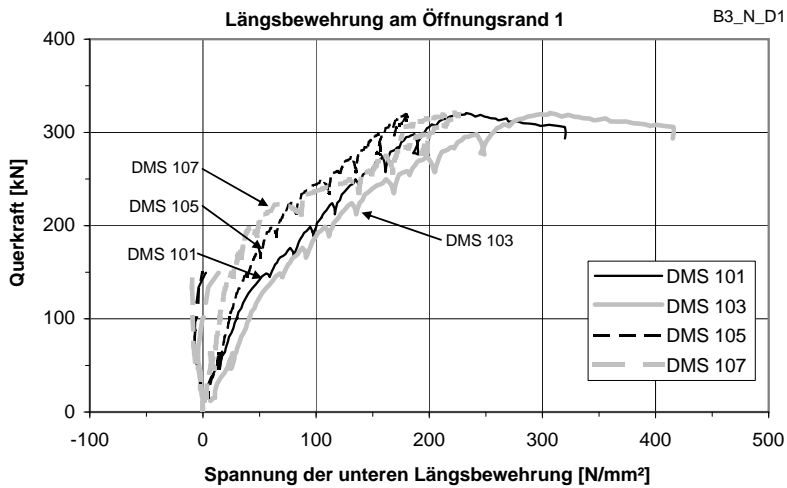


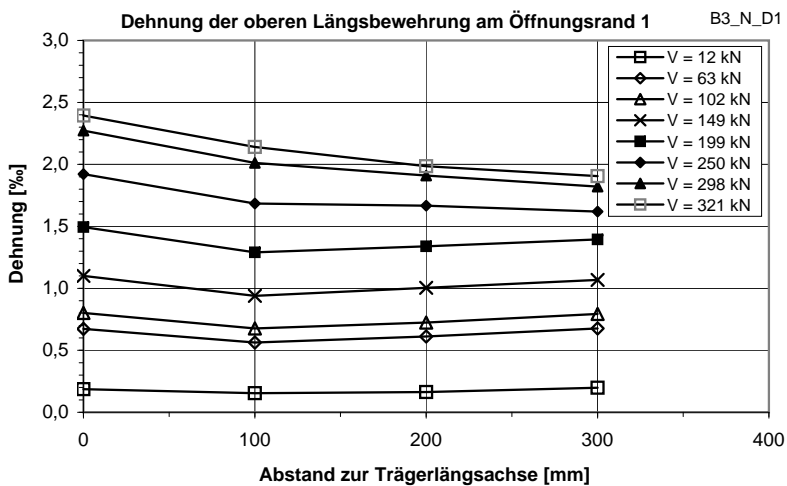
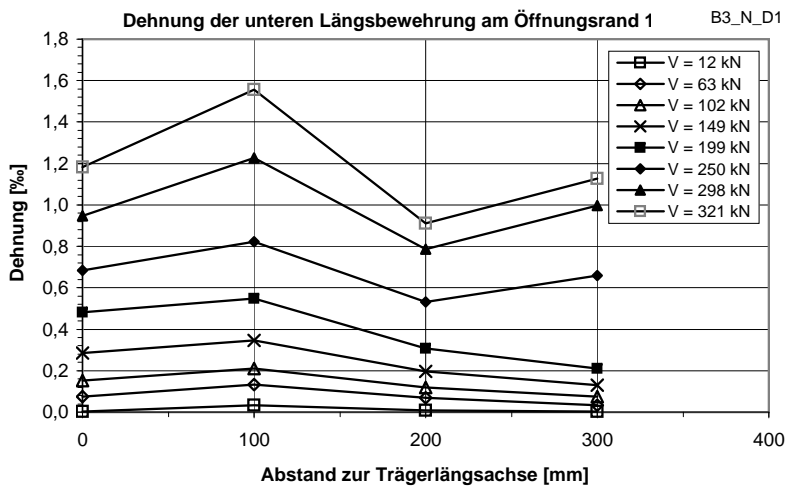
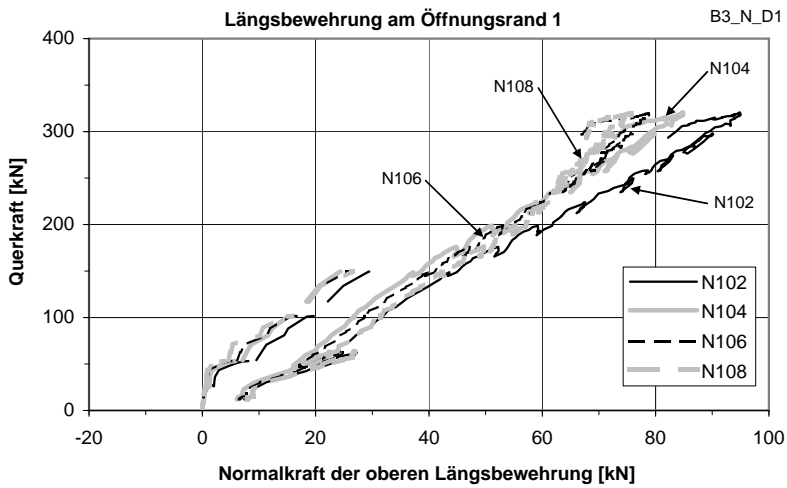


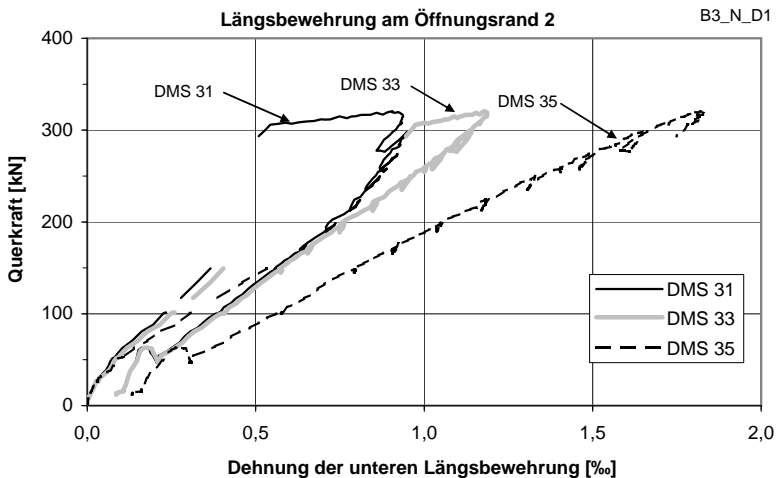
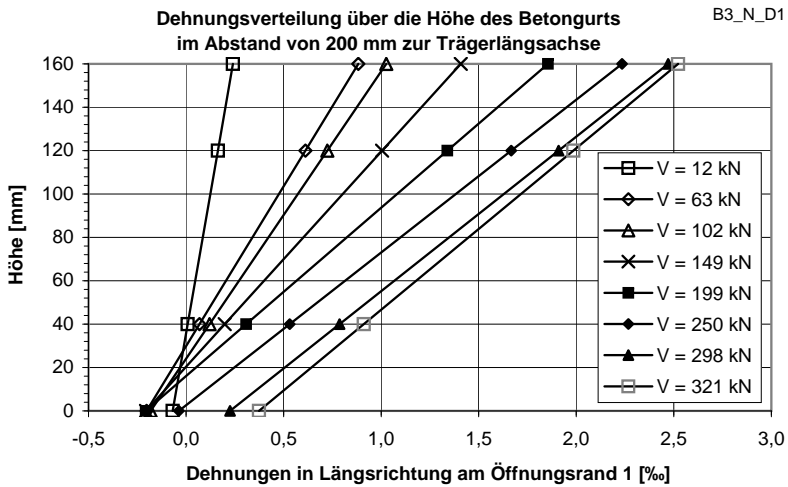
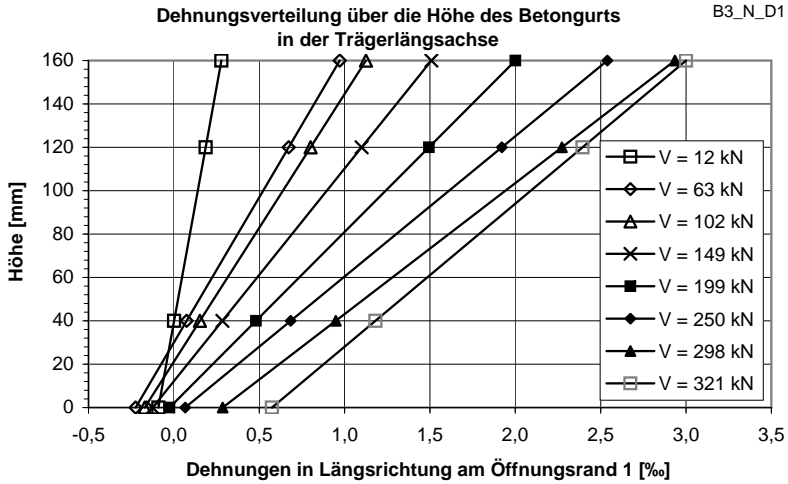


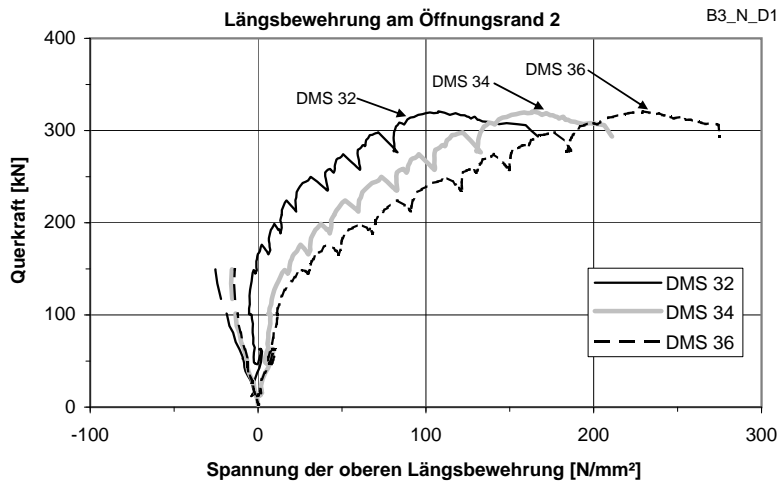
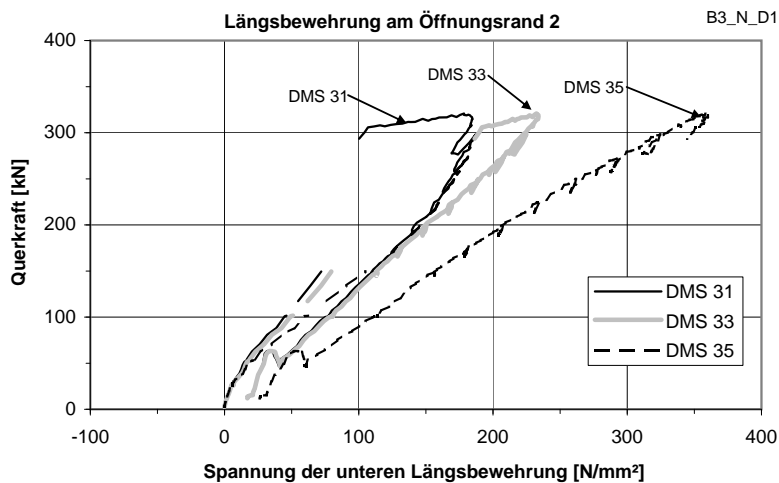
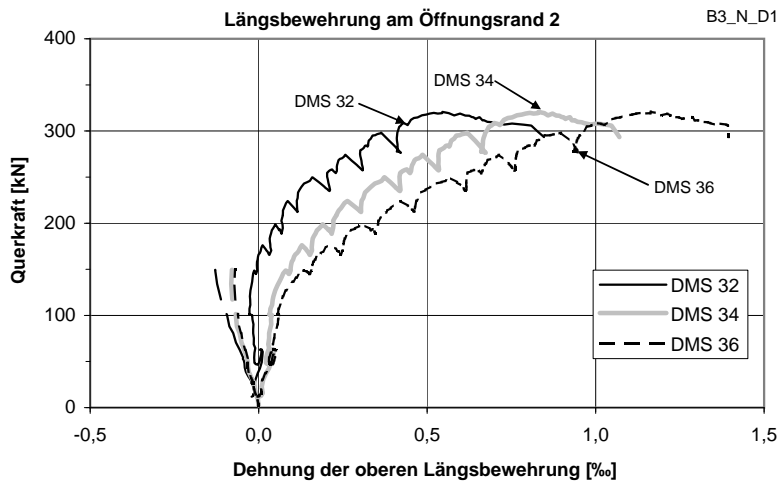
B.27.5. Längsbewehrung

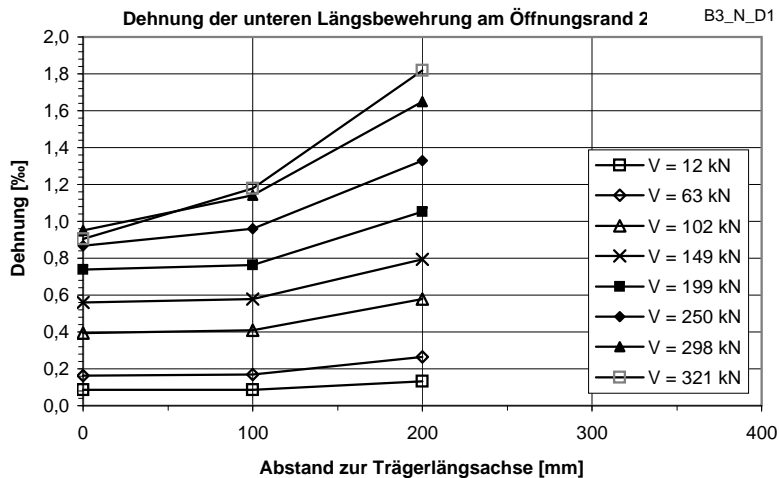
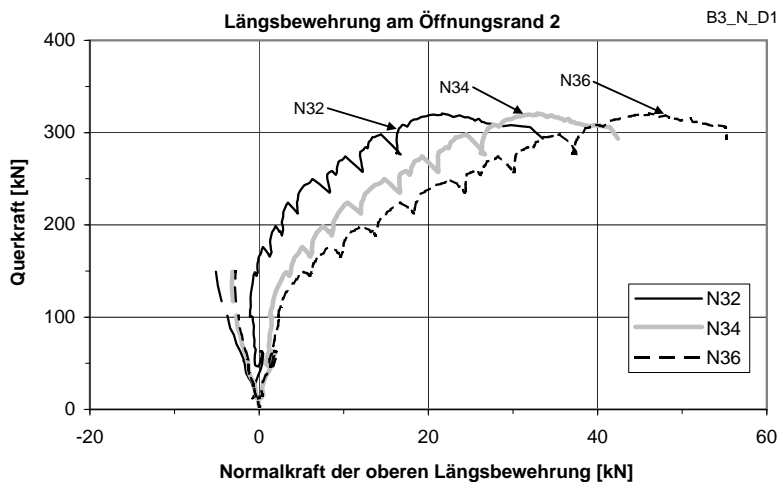
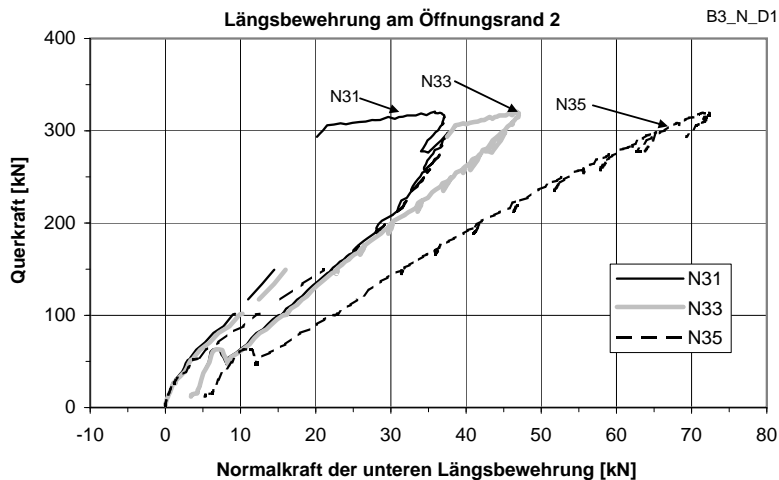


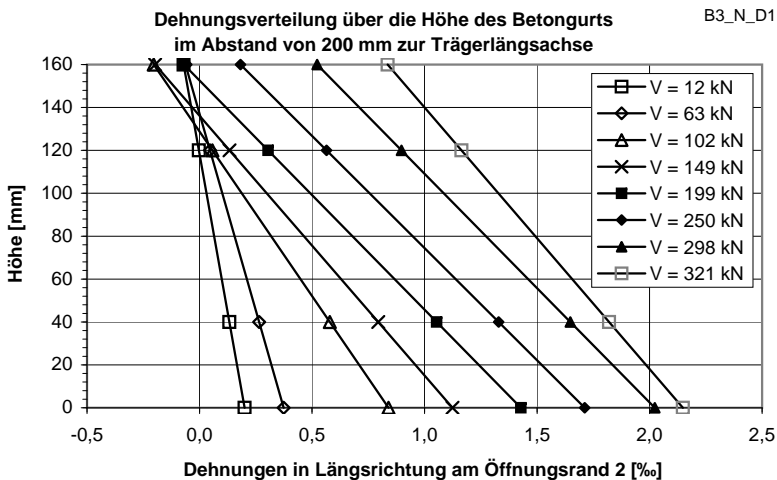
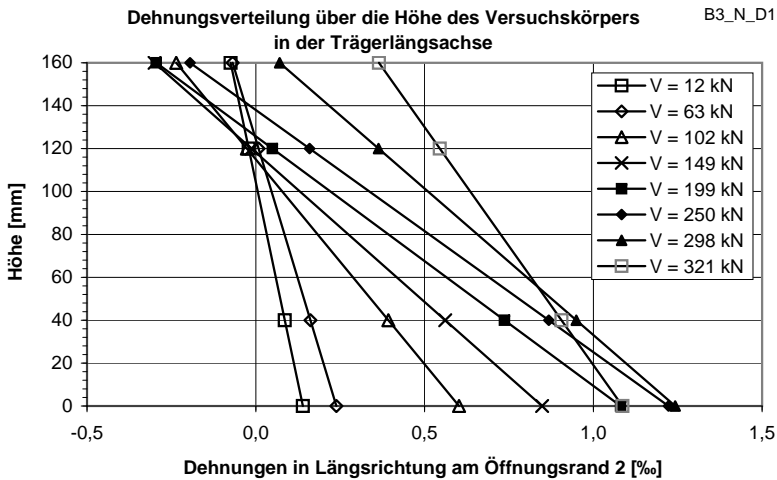
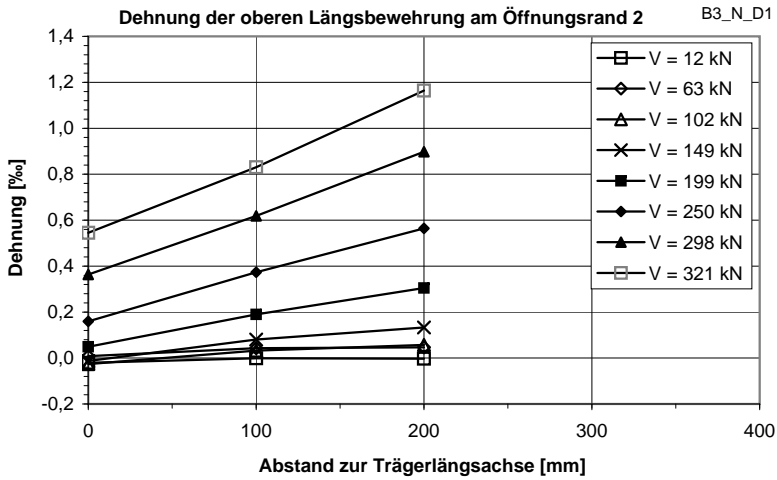




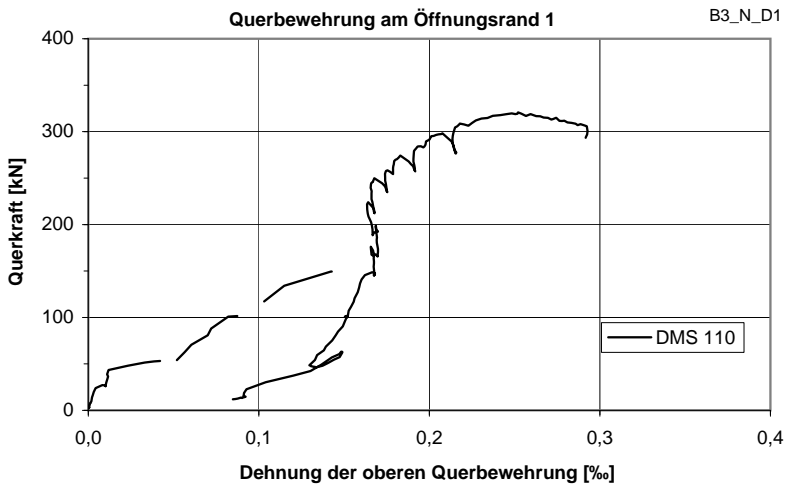
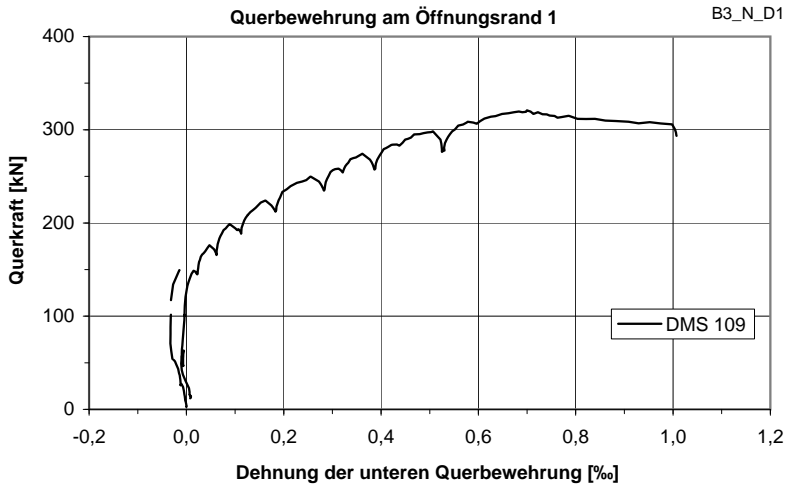


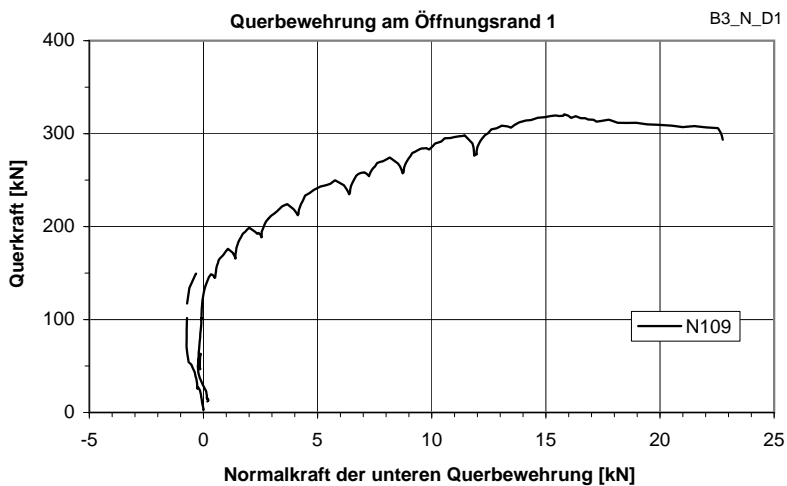
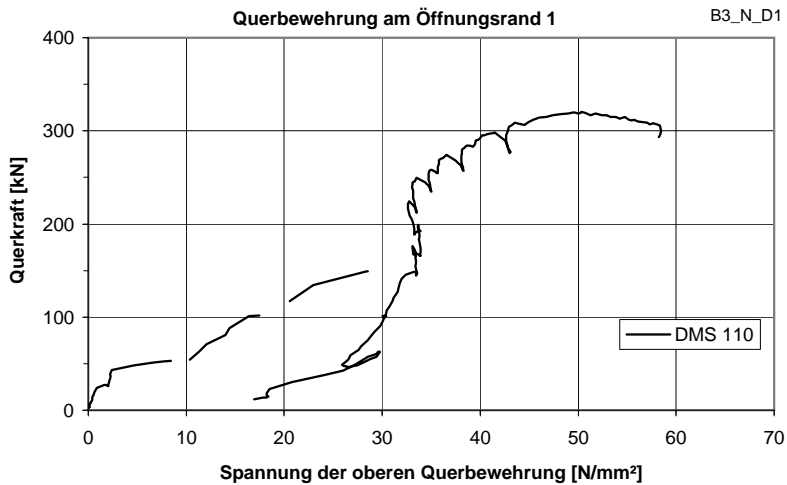
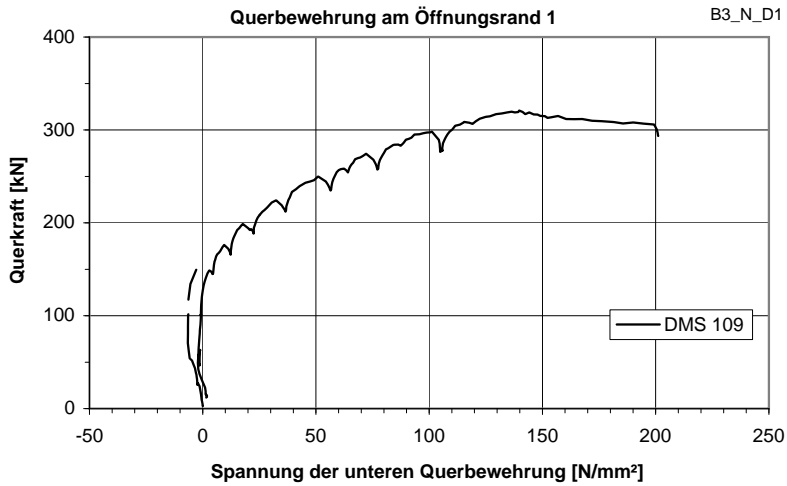


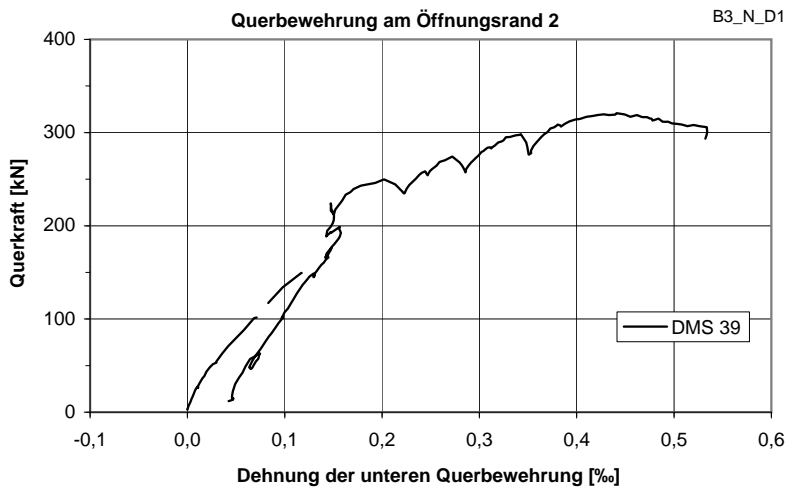
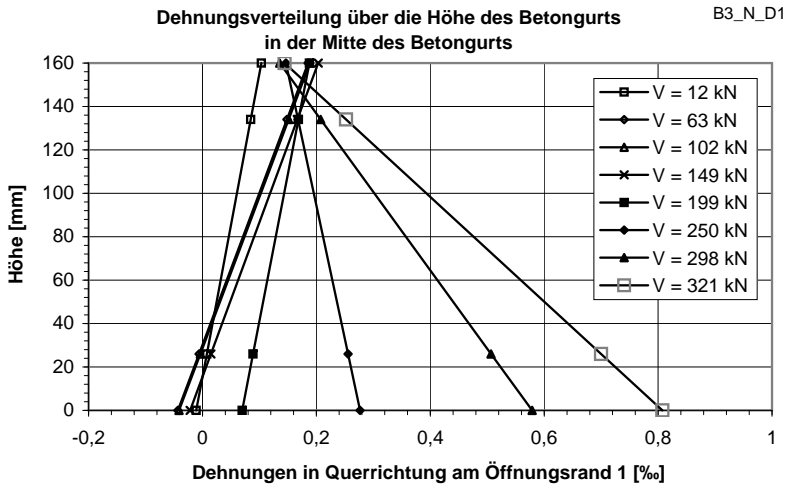
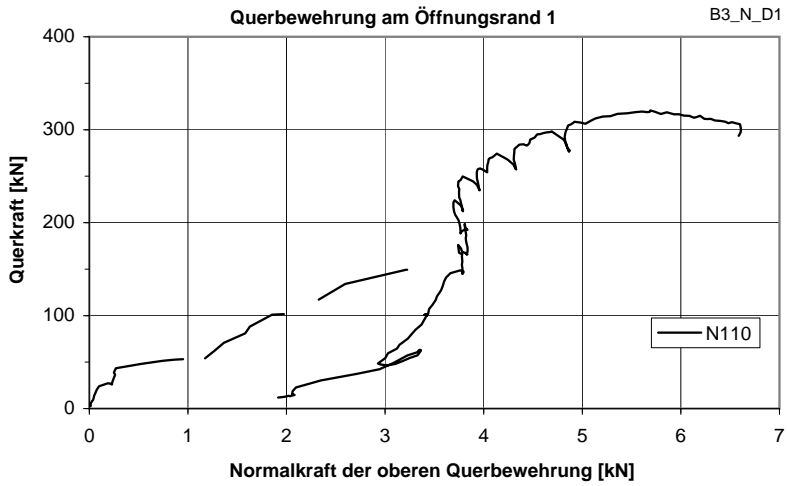


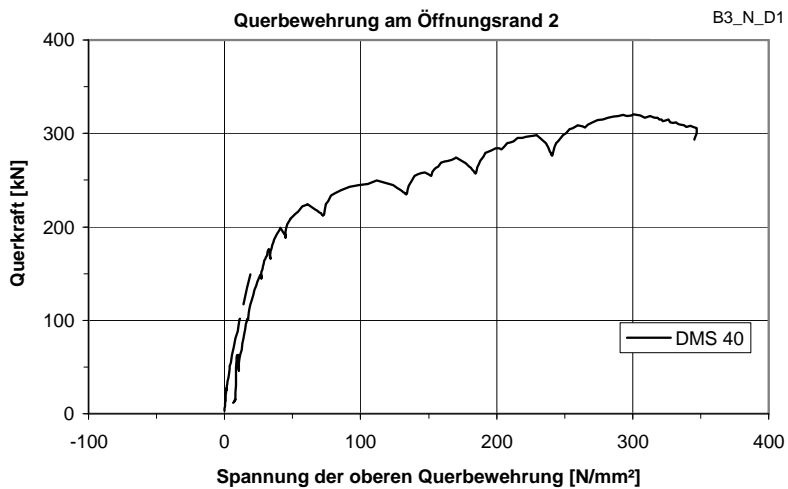
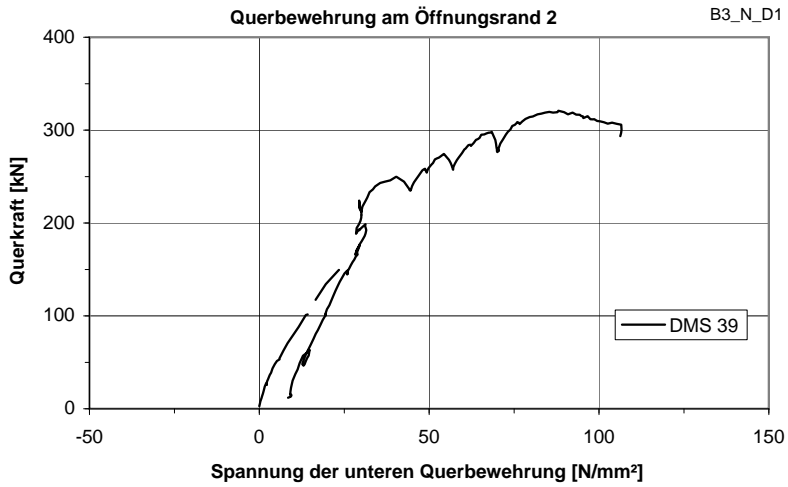
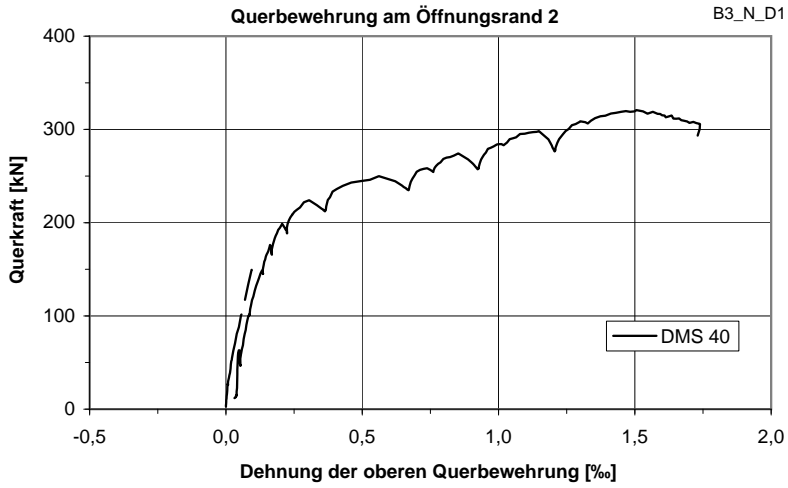


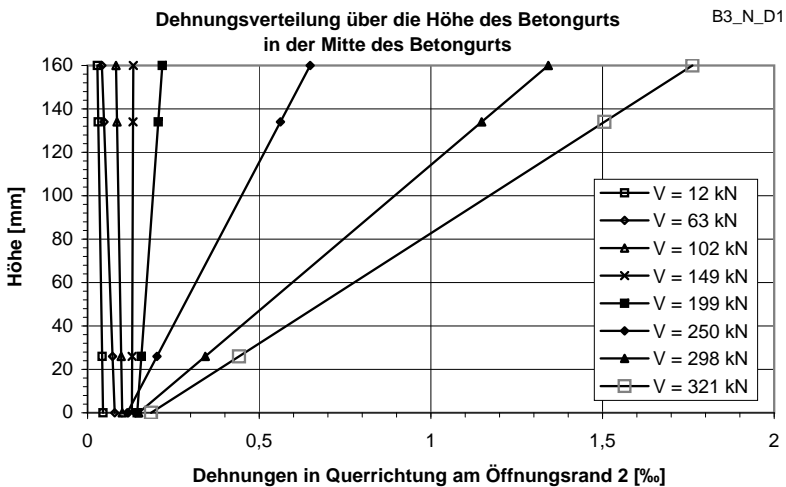
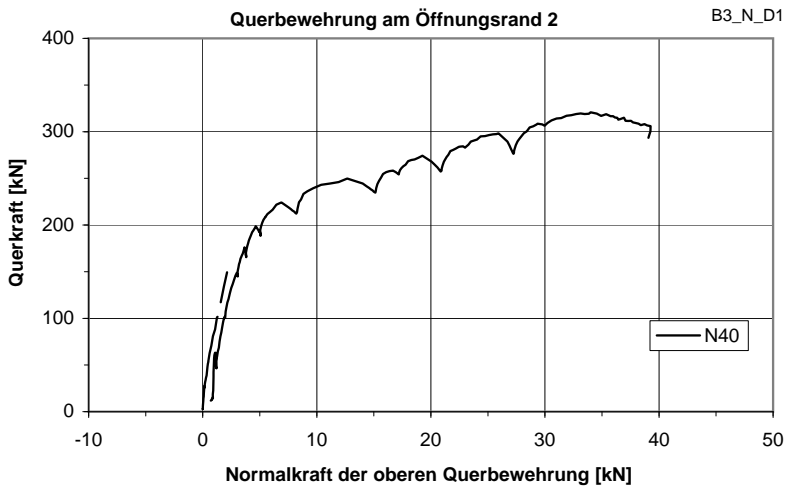
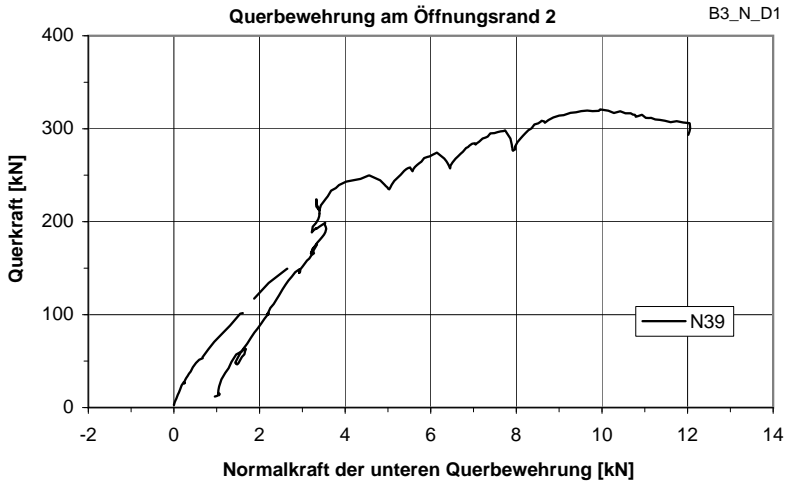
B.27.6. Querbewehrung



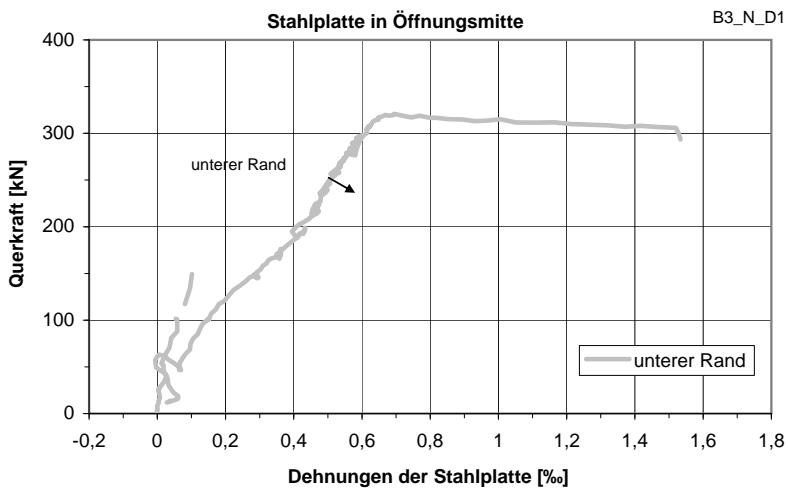
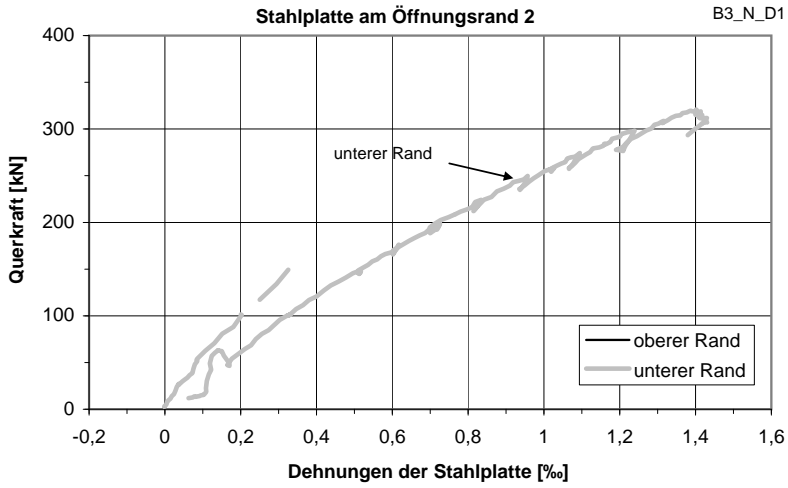


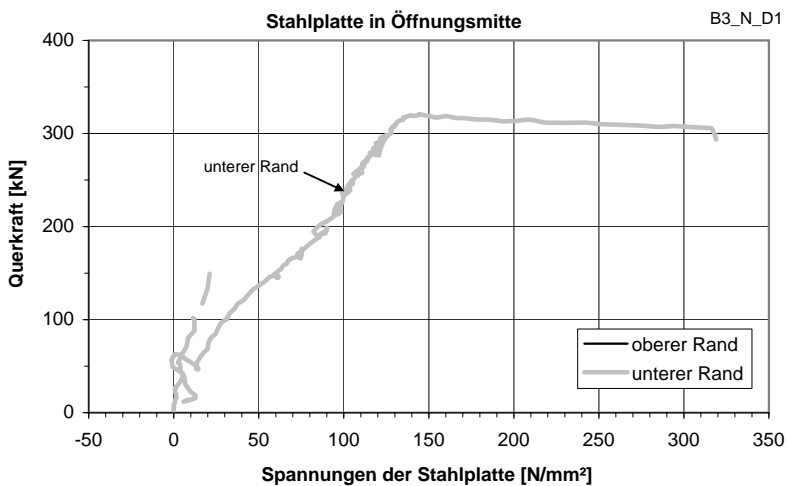
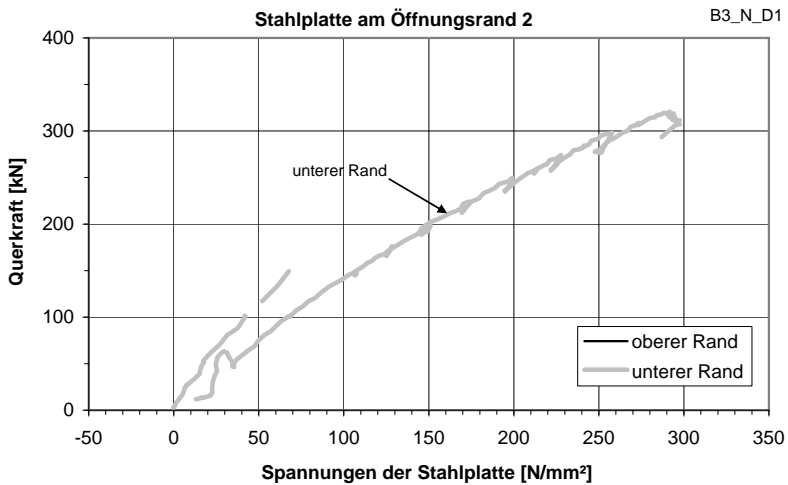
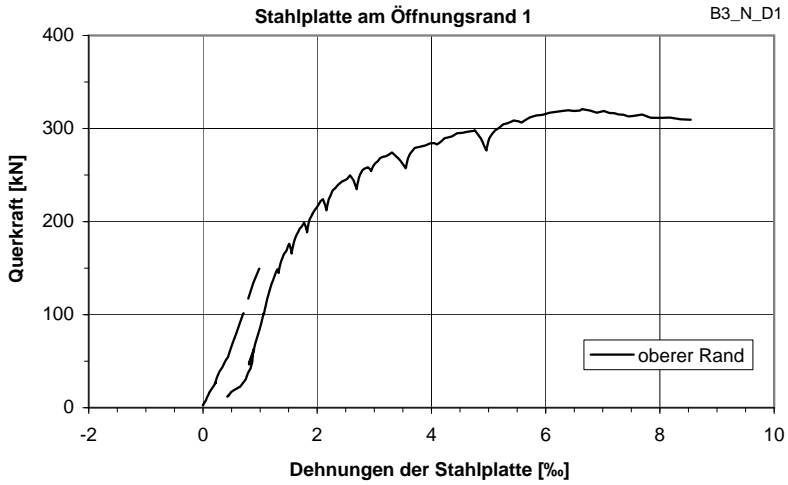


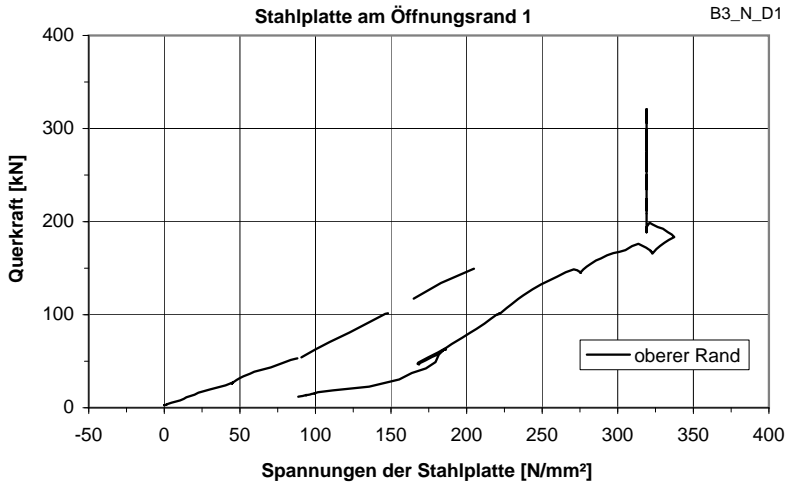




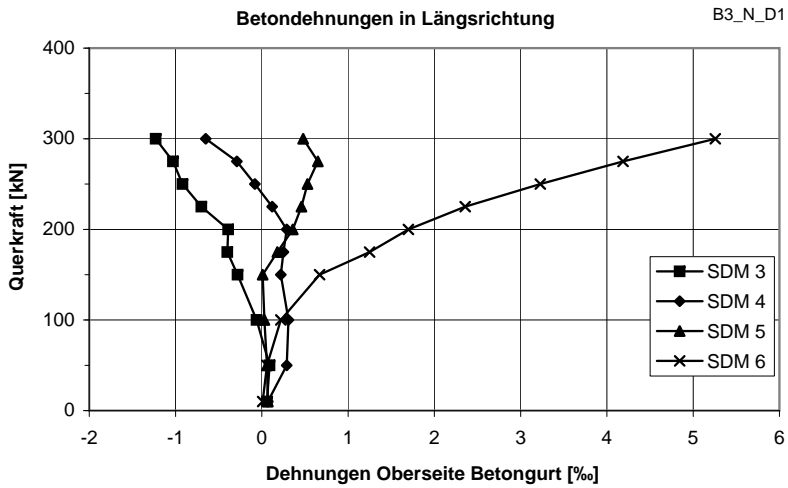
B.27.7. Stahlplatte

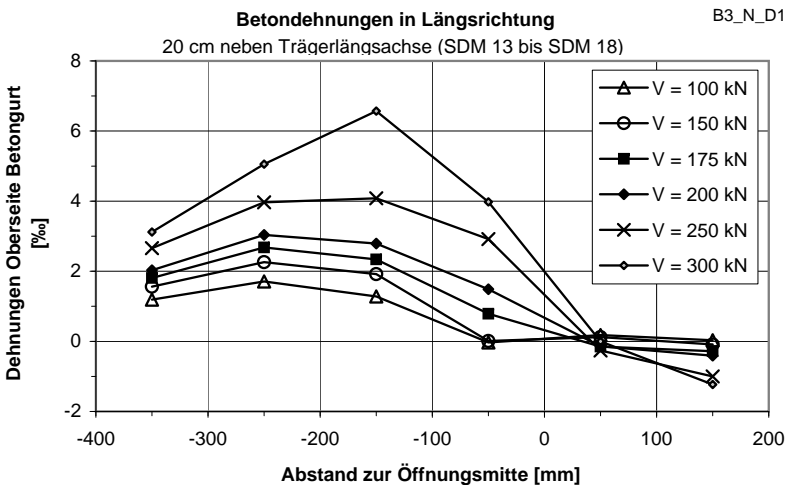
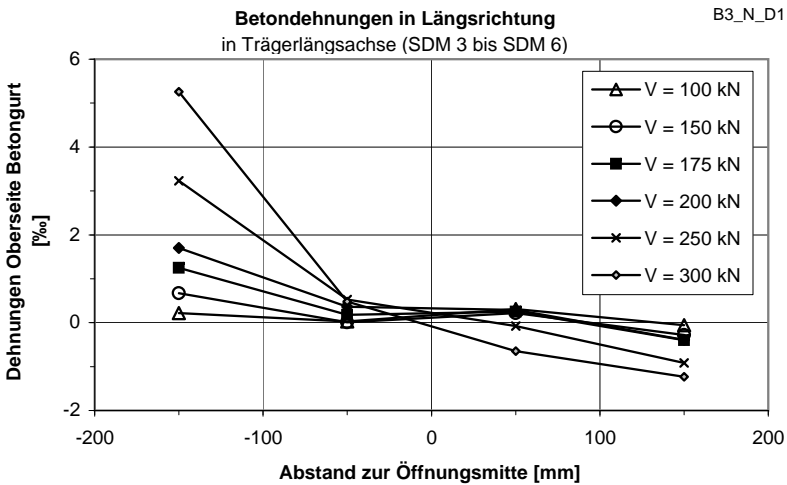
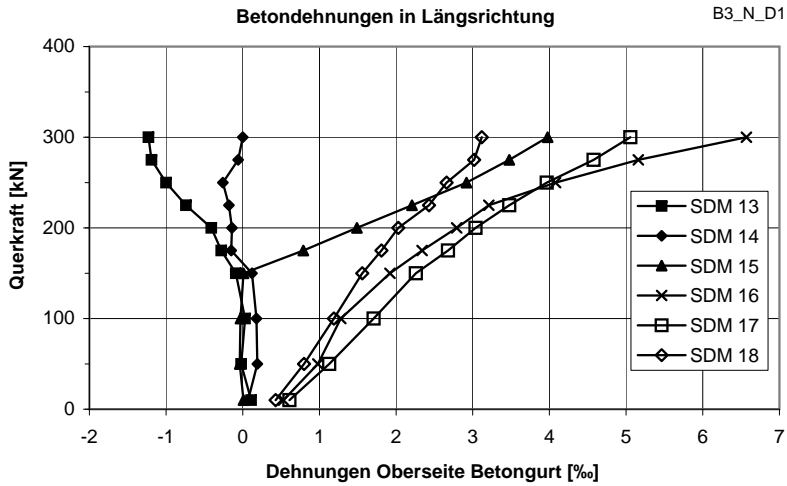


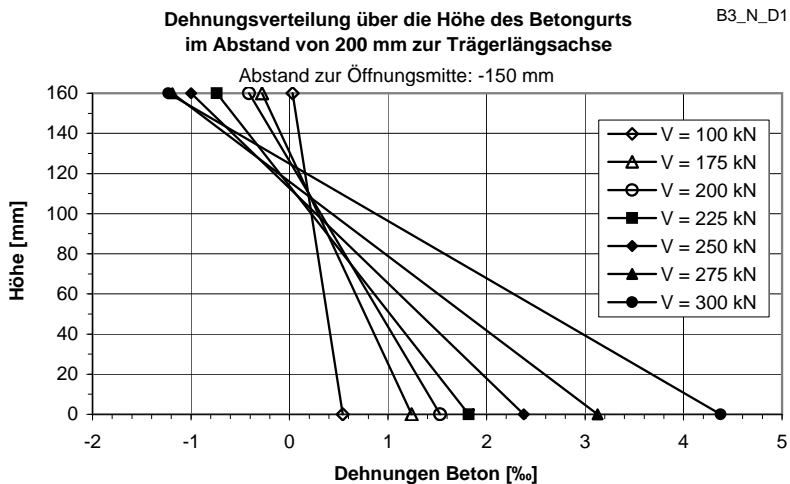
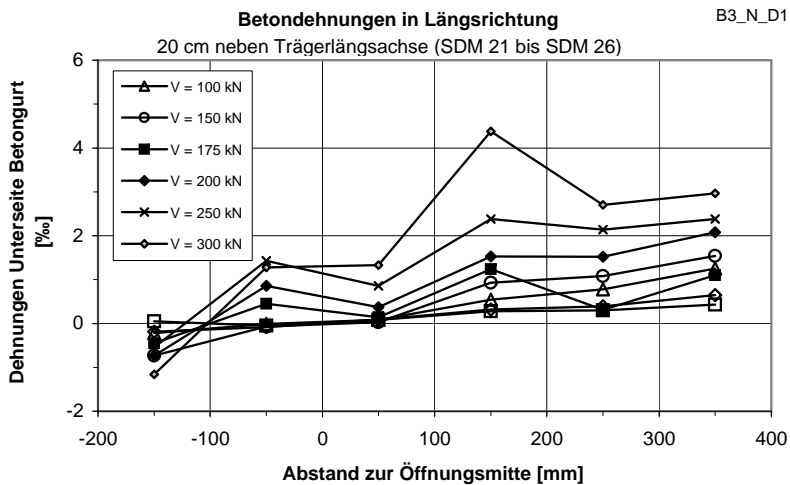
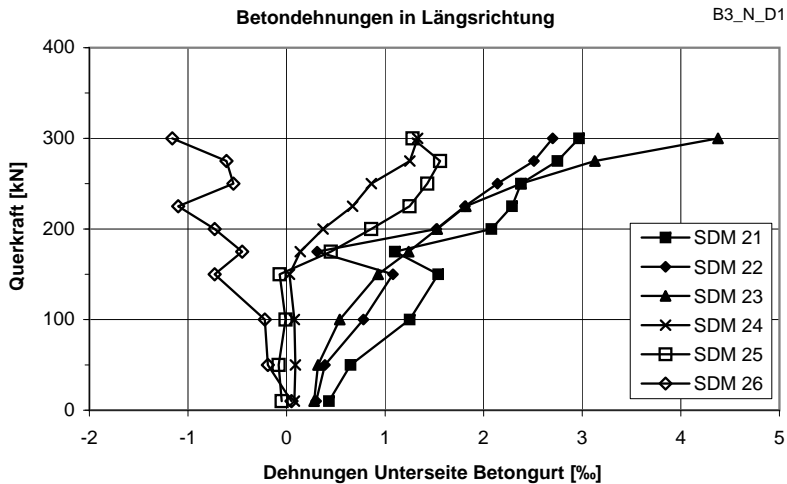


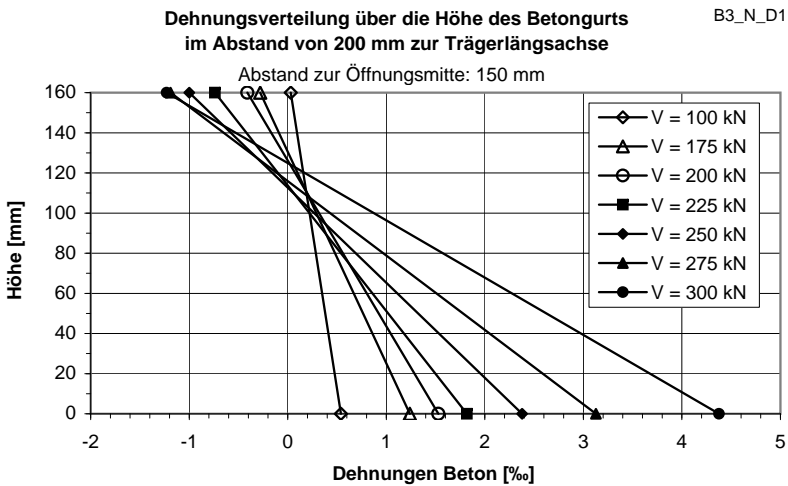
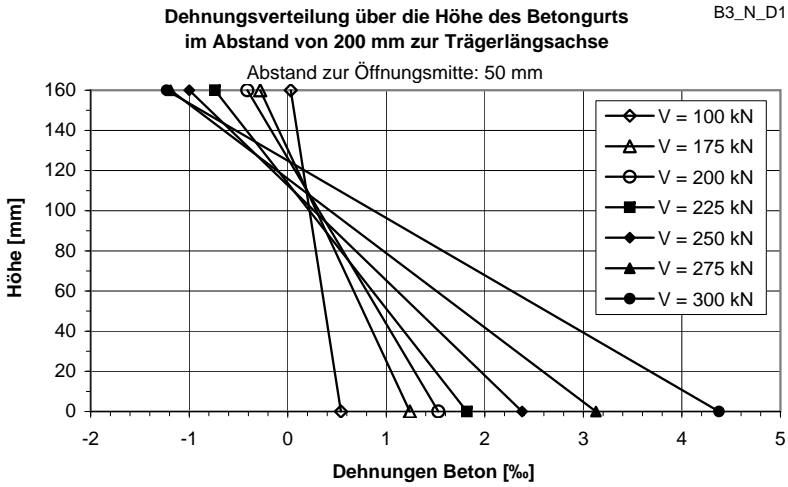
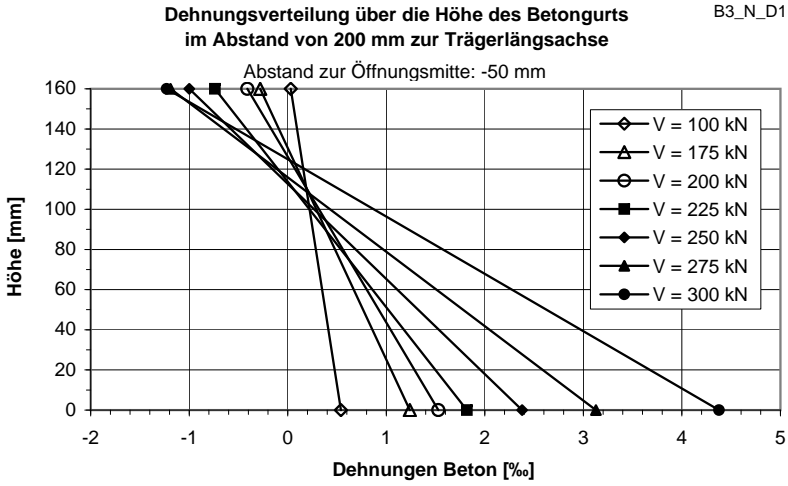


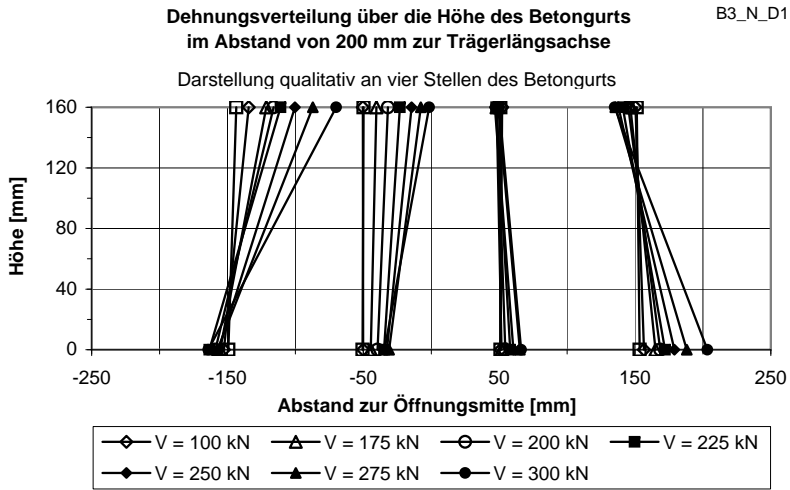
B.27.8. Betondehnungen





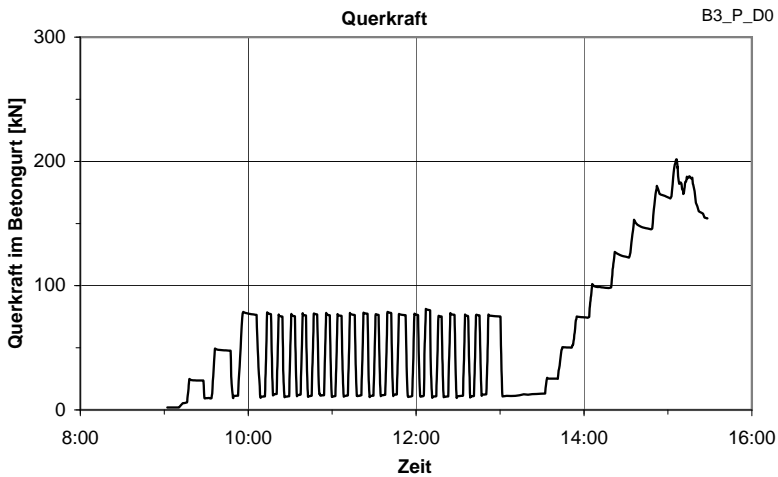


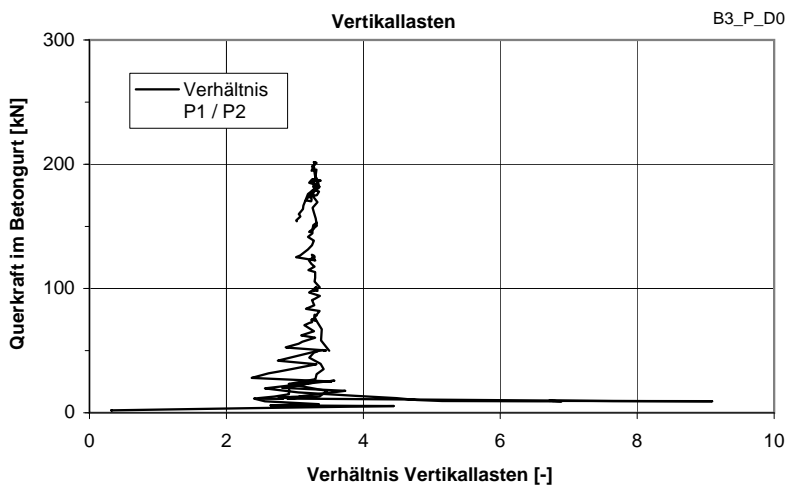
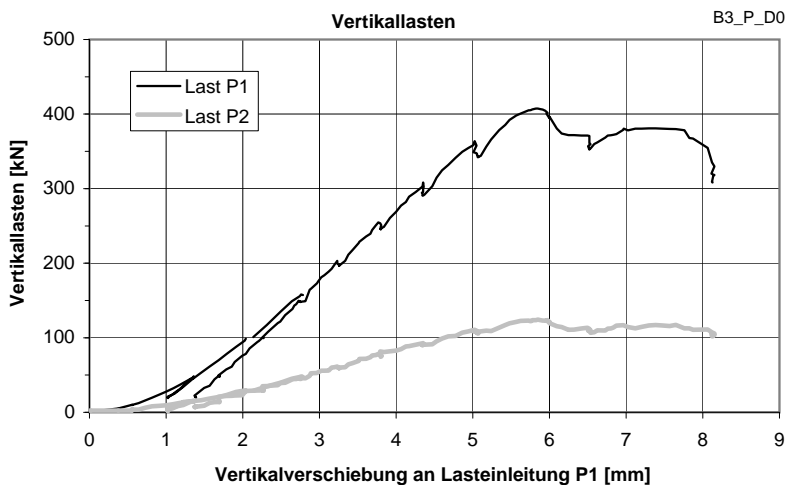
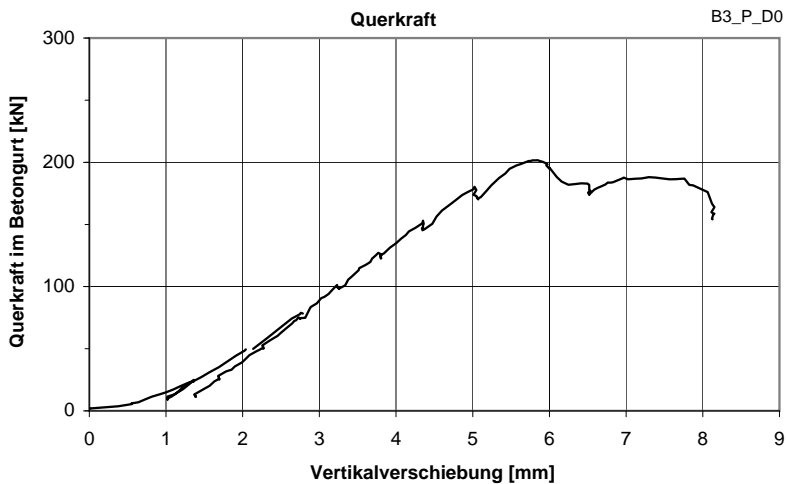


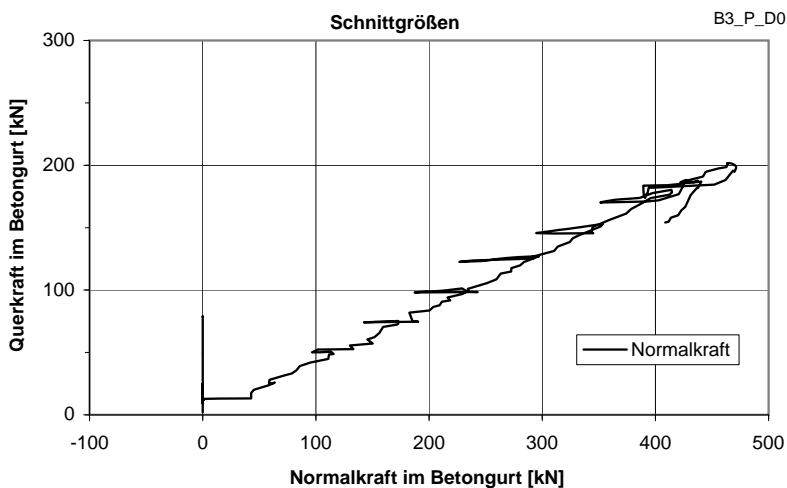
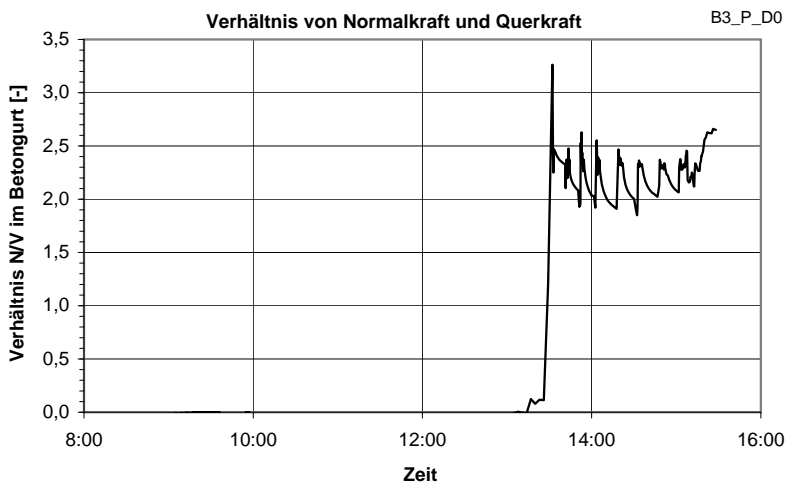
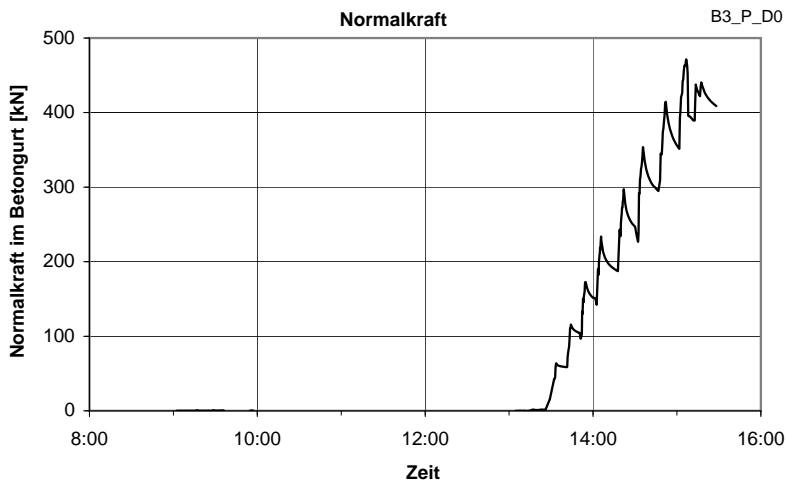


B.28. Versuch B3_P_D0

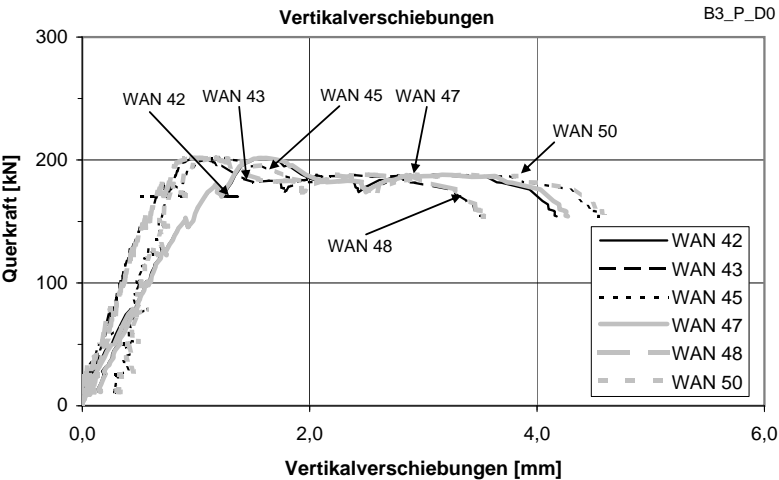
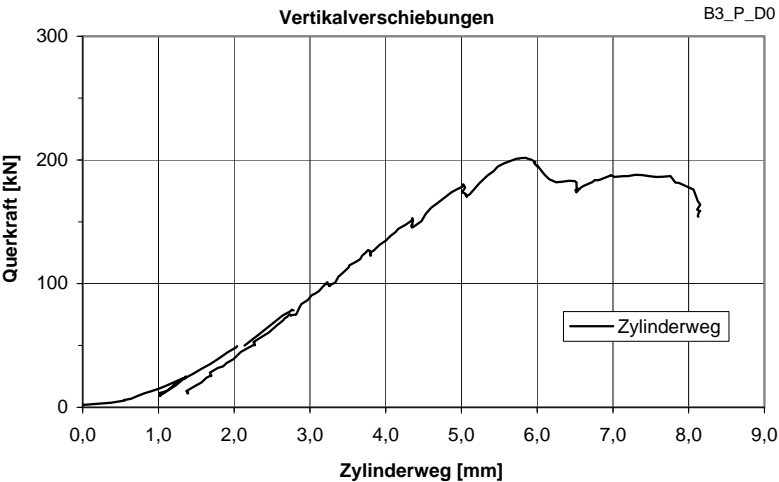
B.28.1. Kräfte

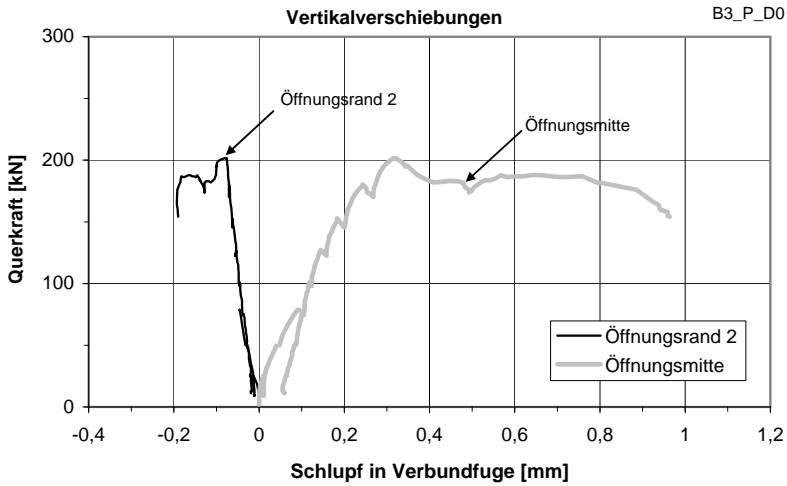
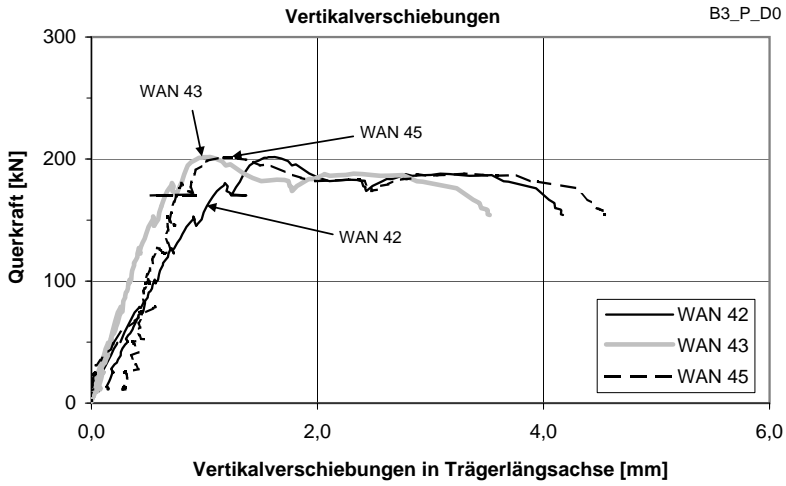




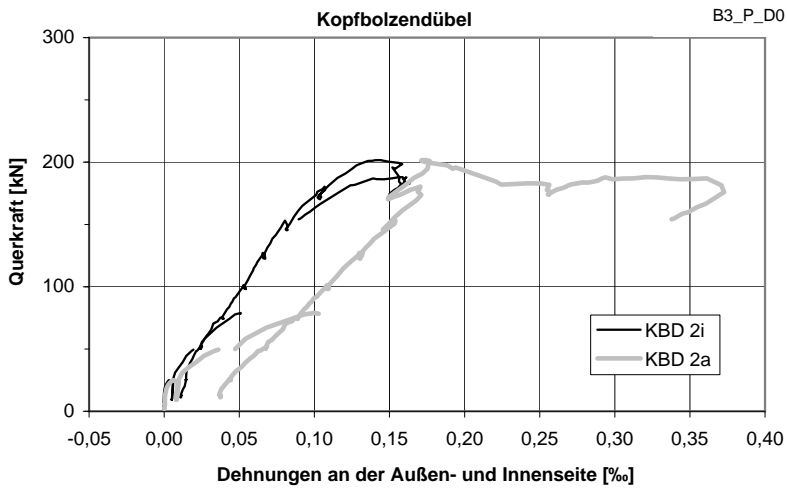
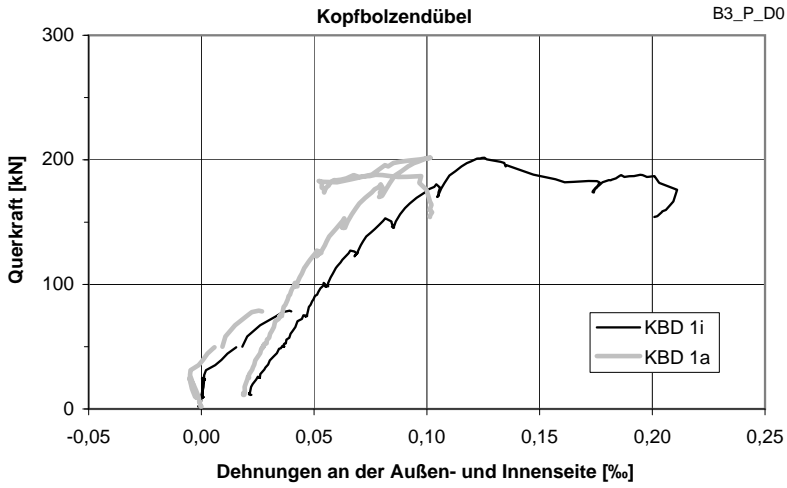


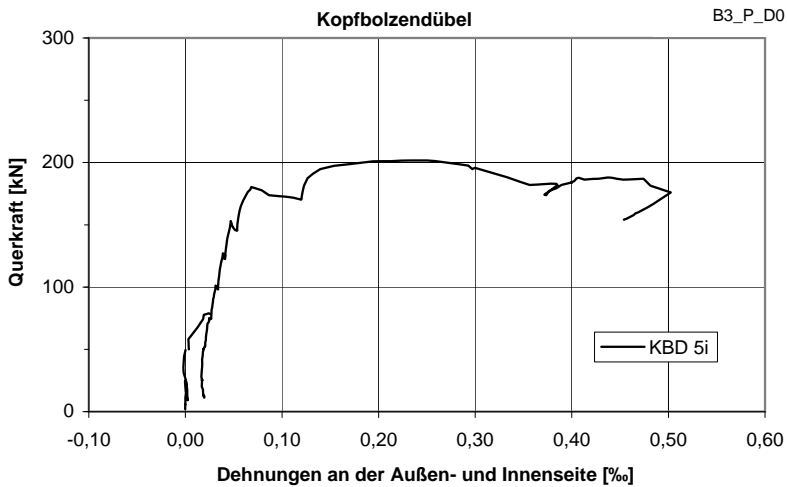
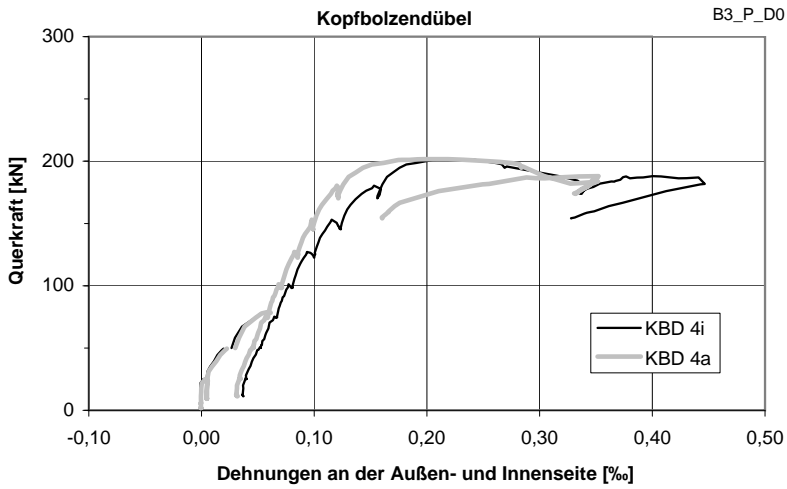
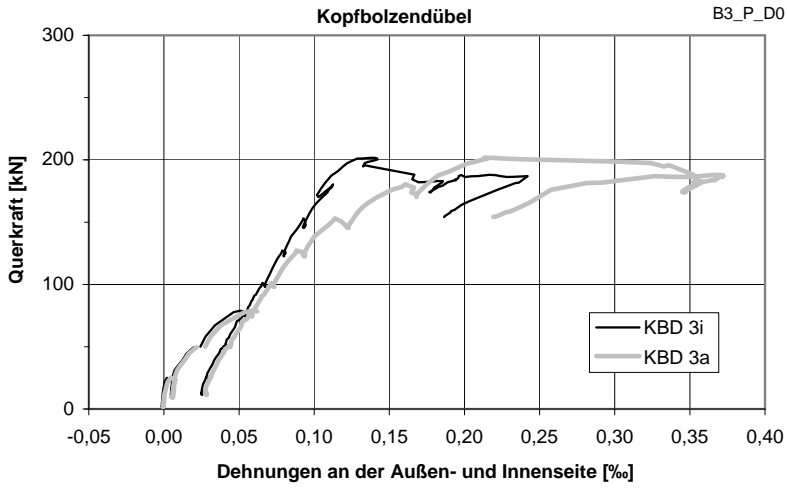
B.28.2. Verformungen

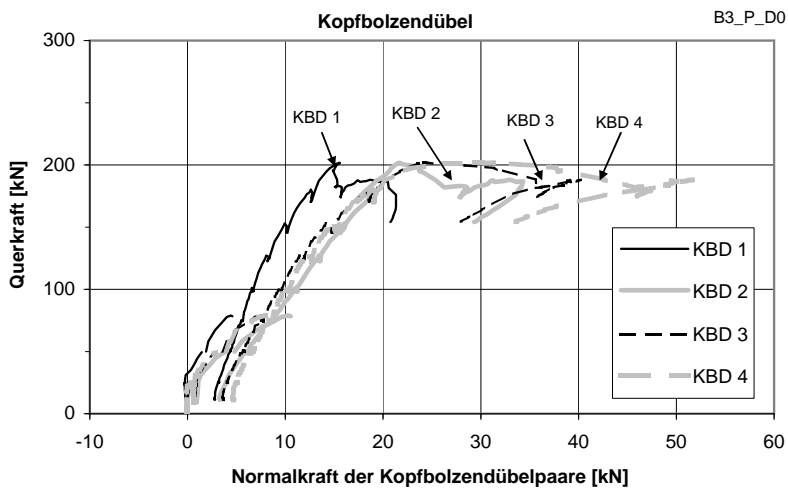
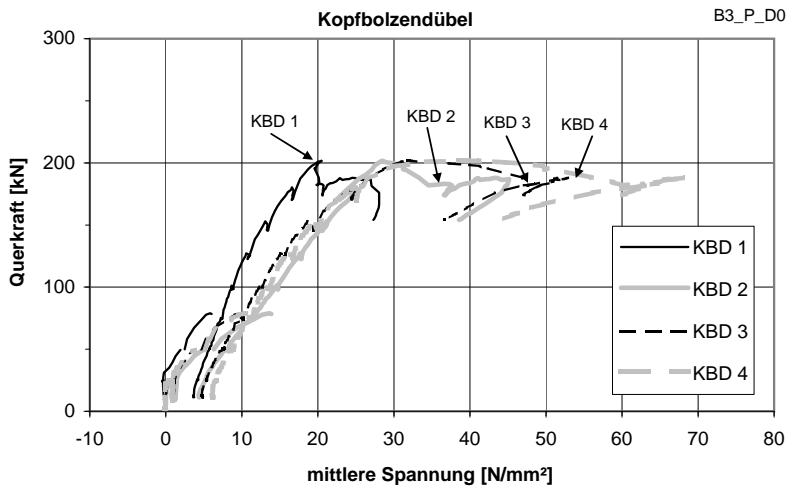
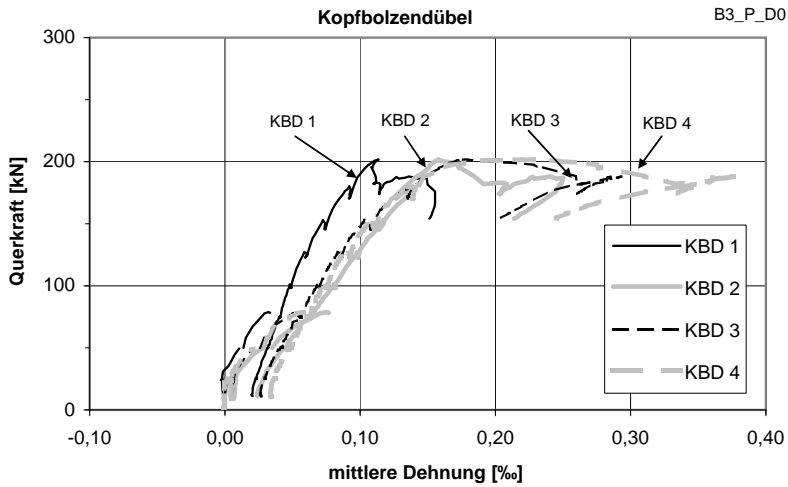




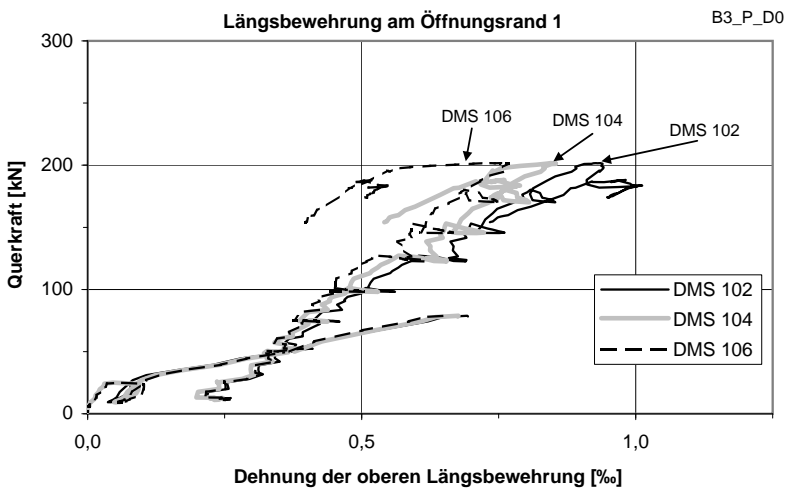
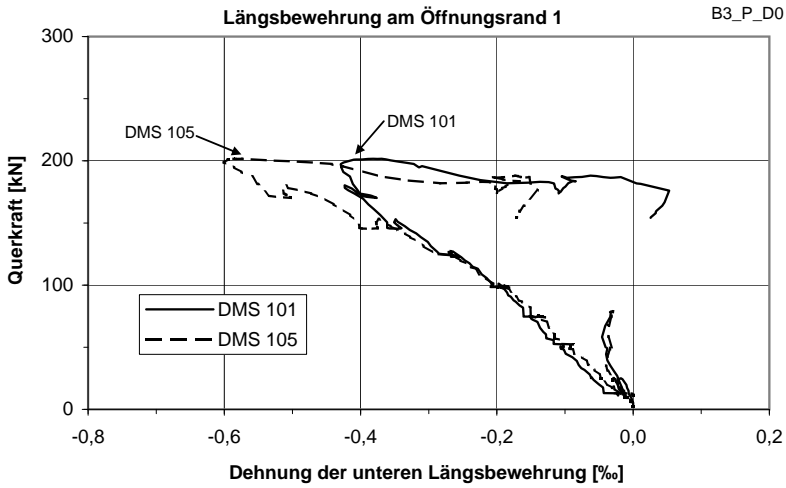
B.28.3. Kopfbolzendübel

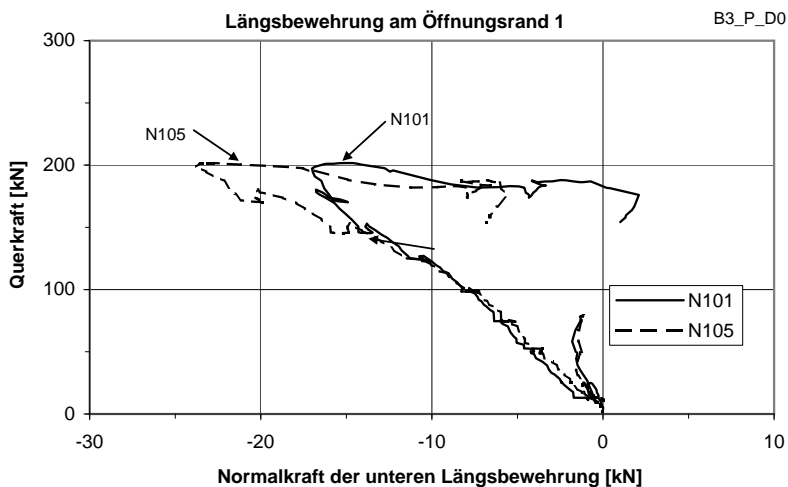
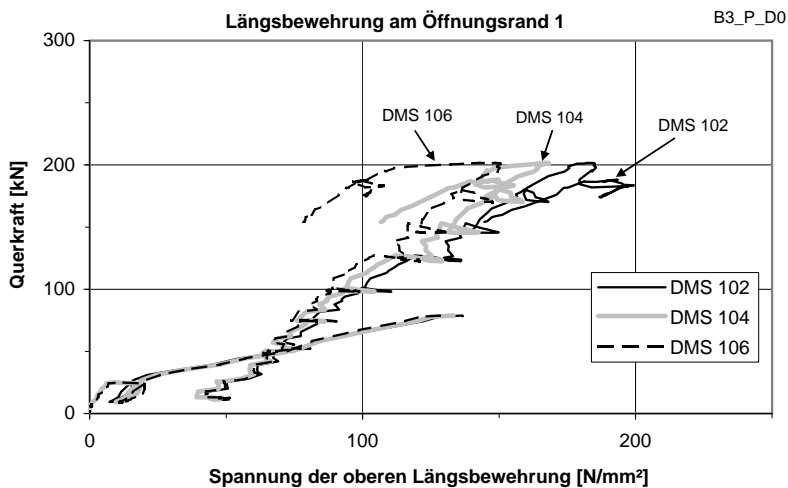
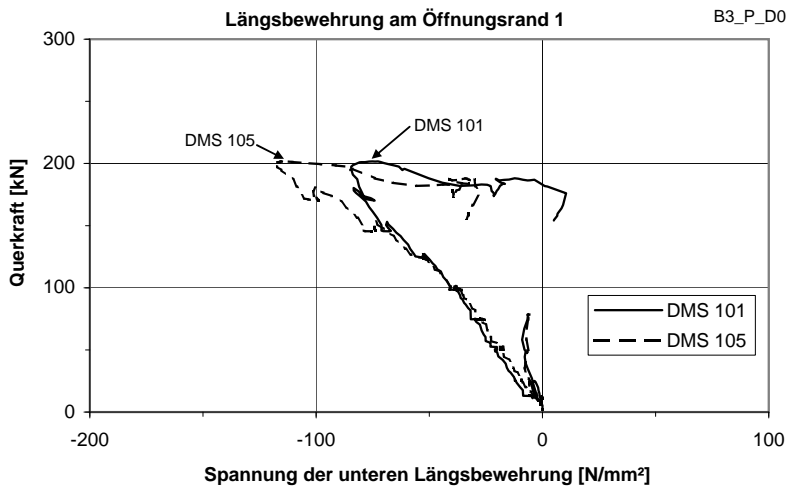


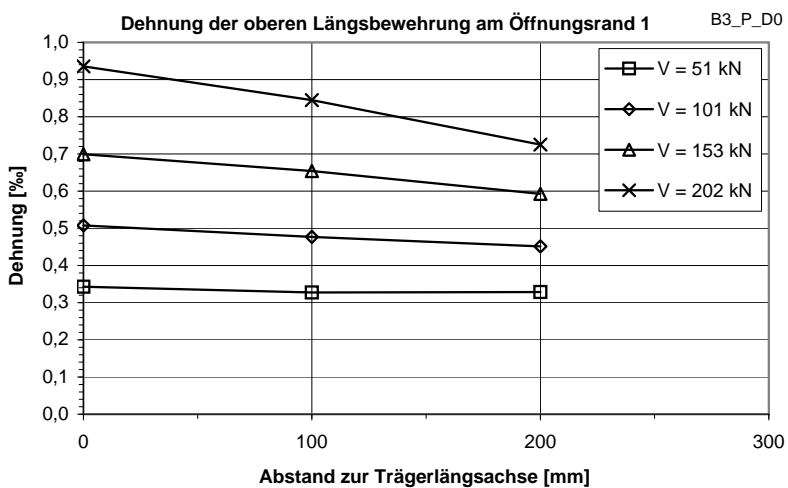
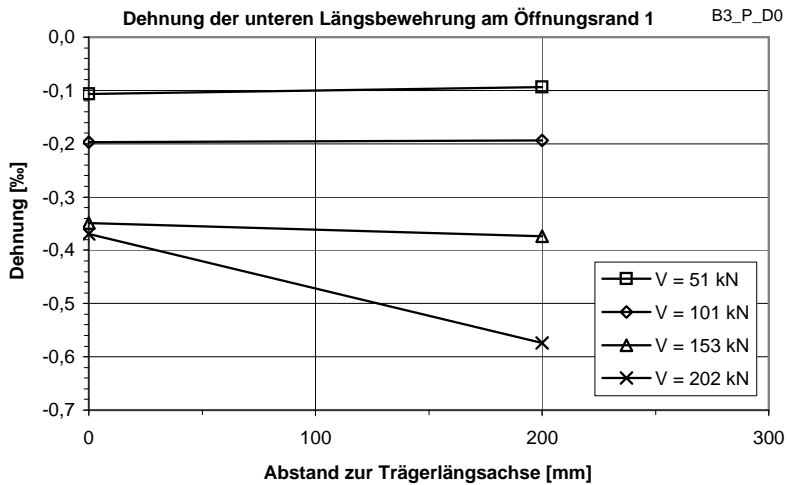
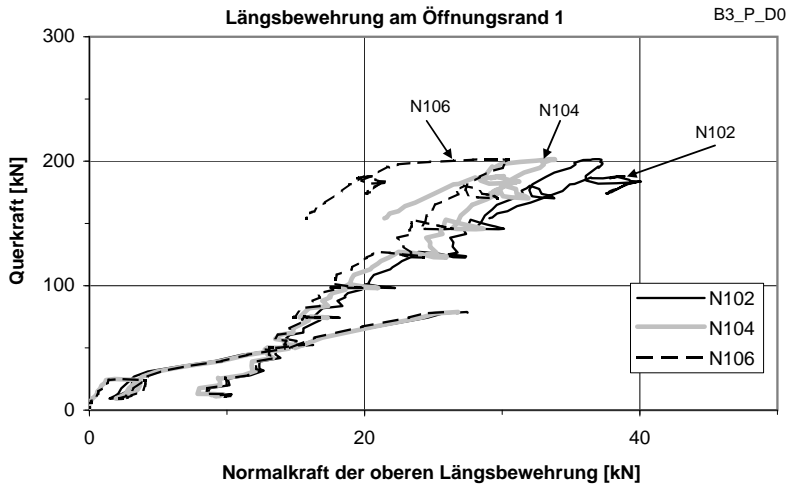


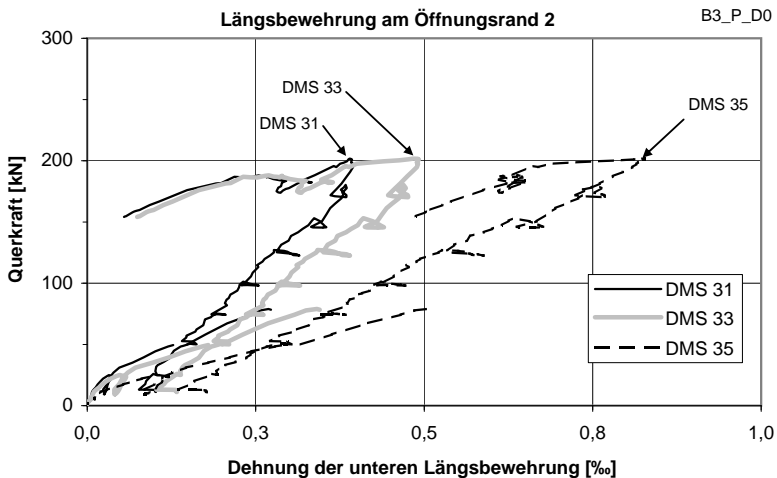
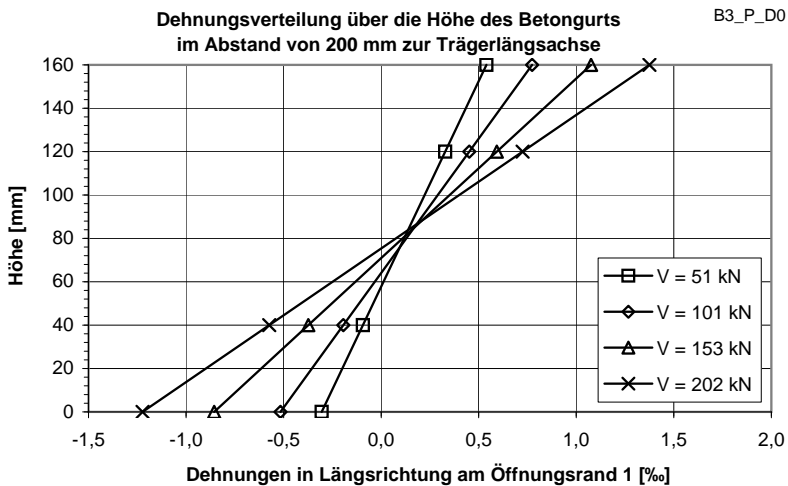
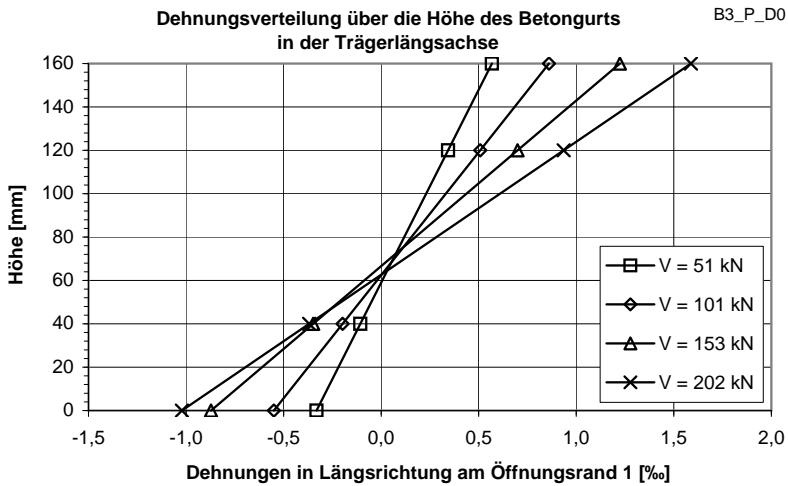


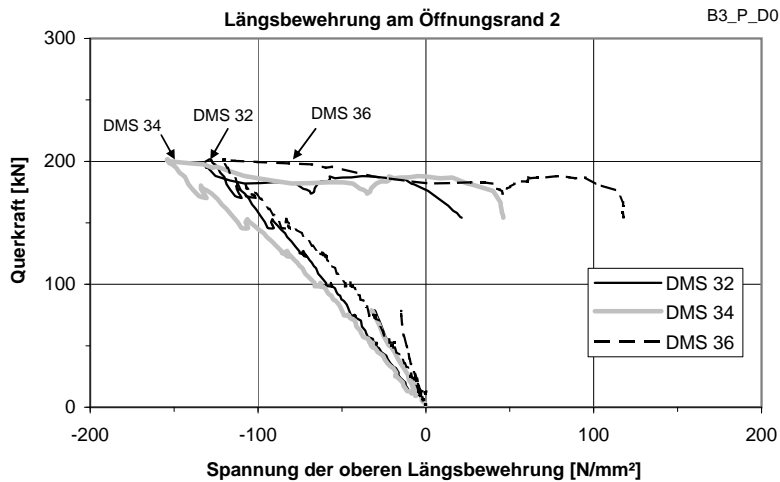
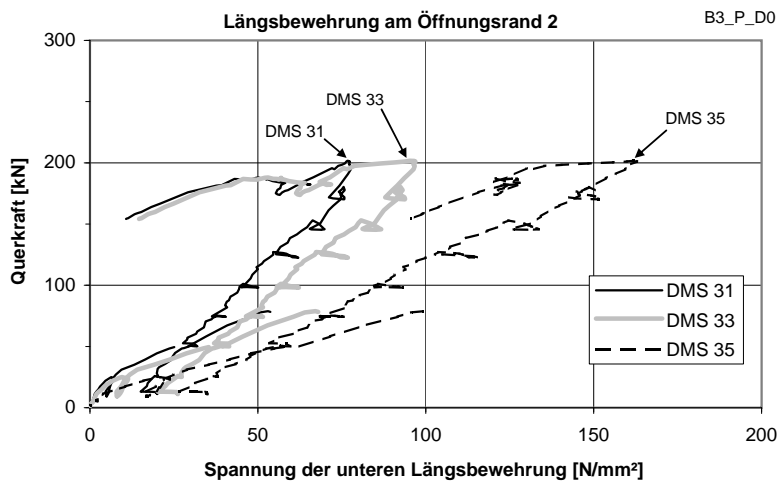
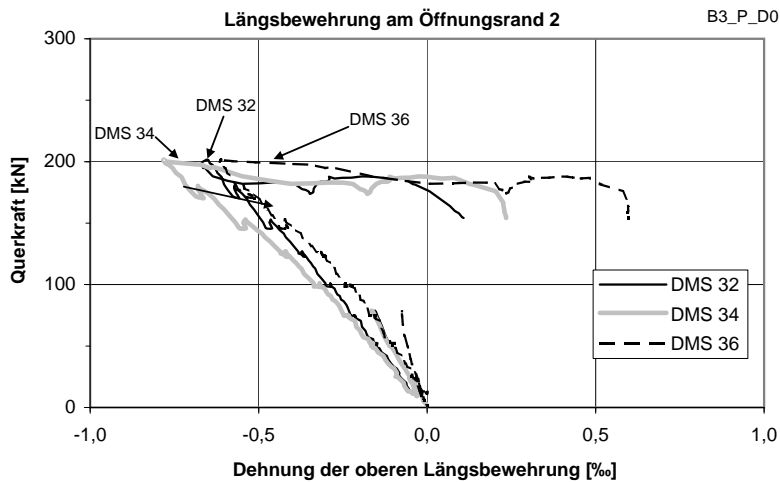
B.28.4. Längsbewehrung

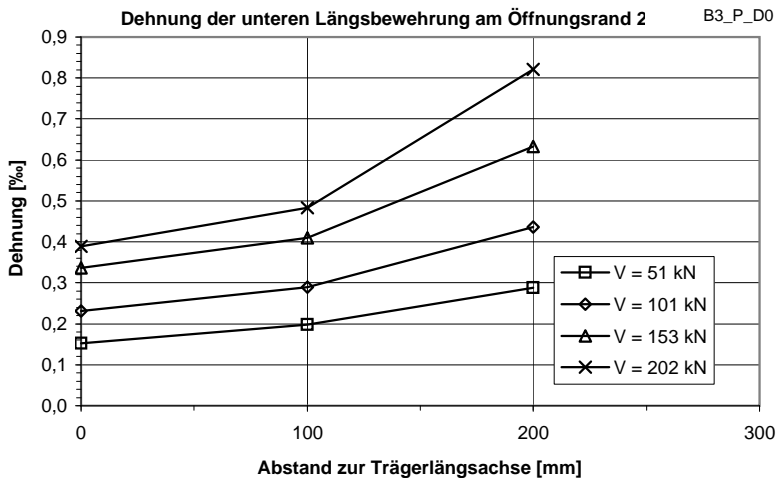
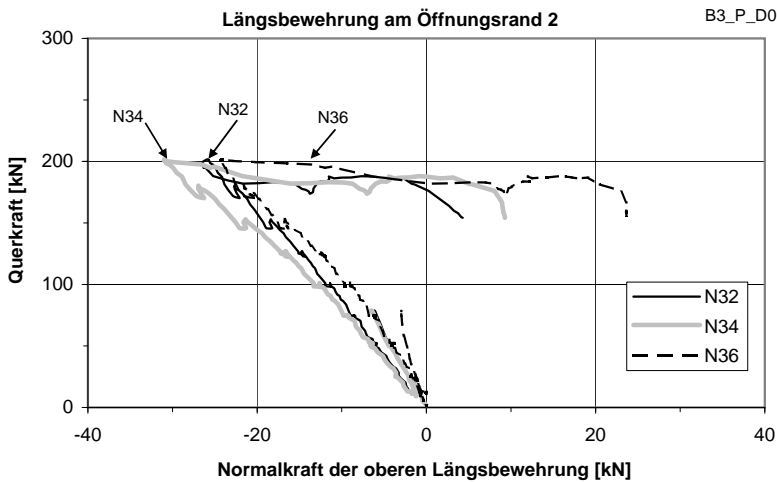
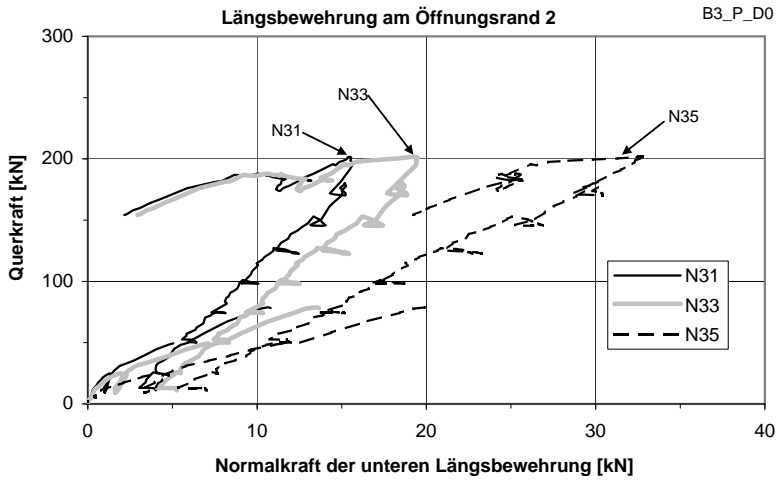


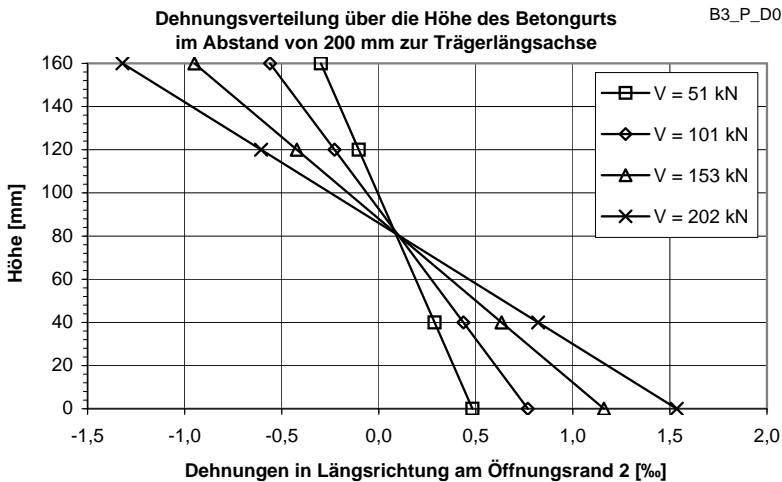
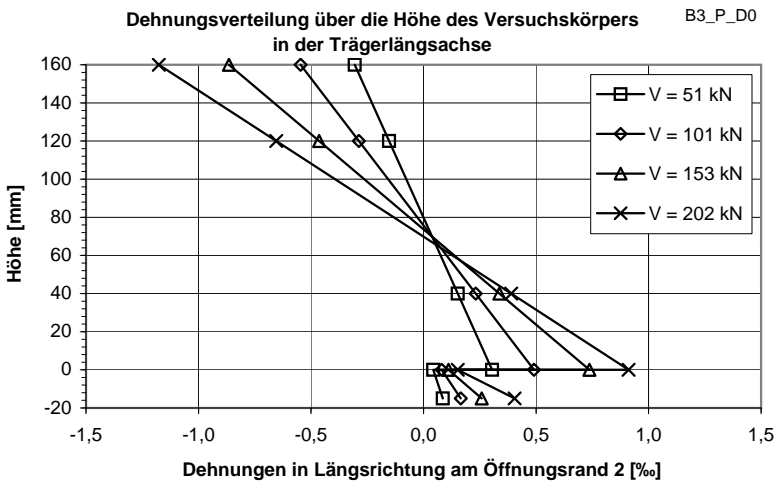
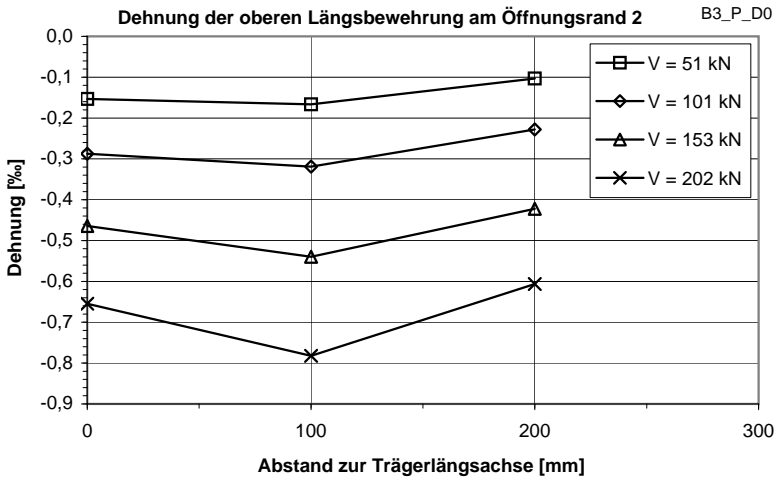




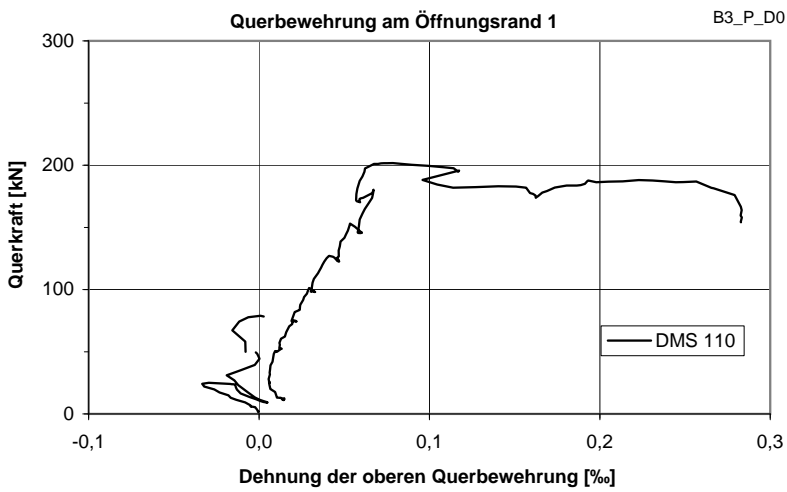
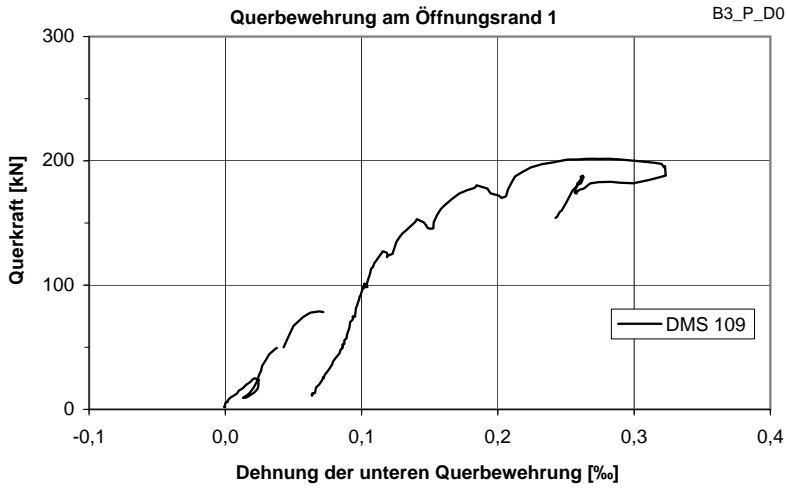


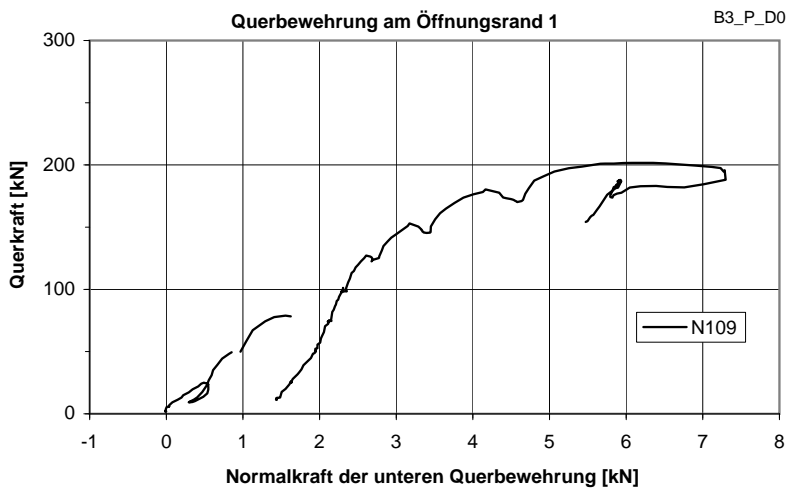
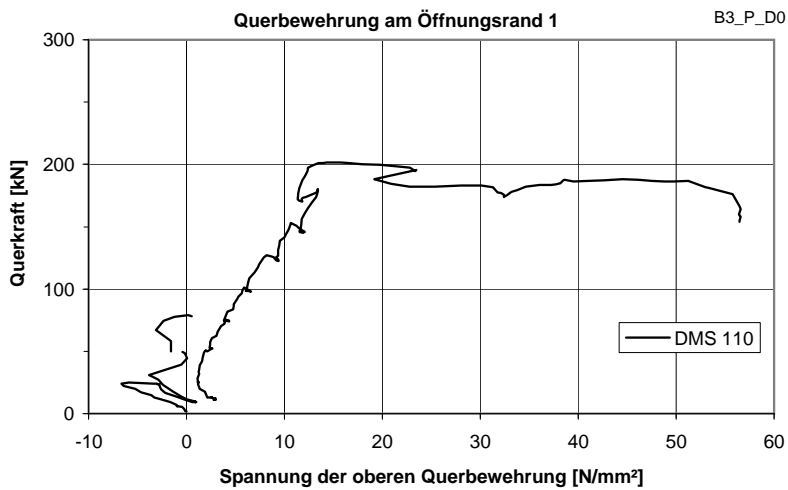
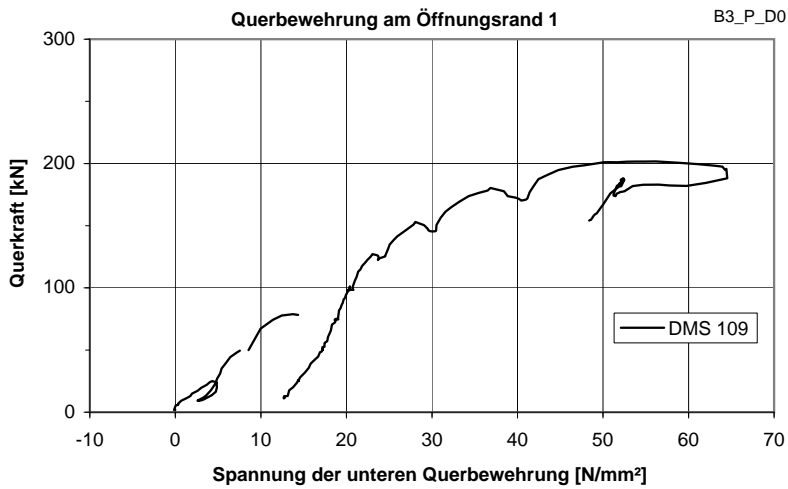


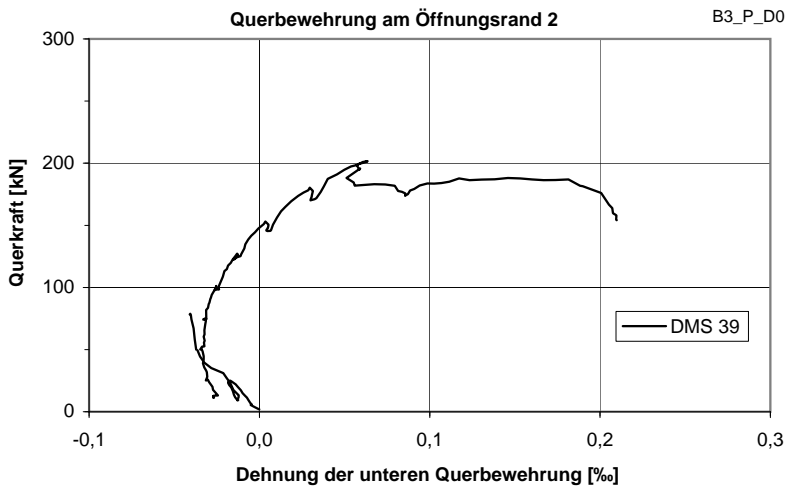
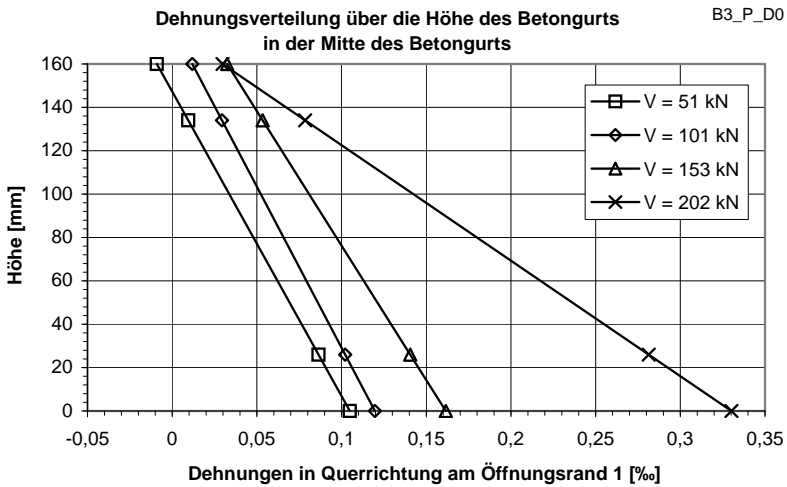
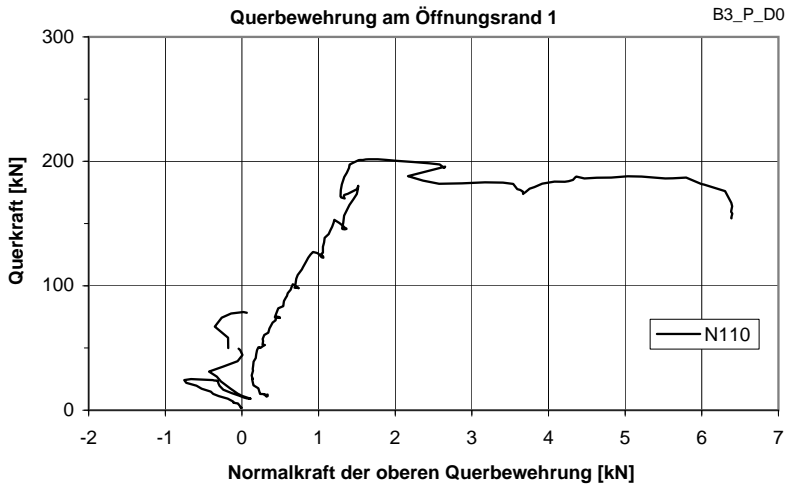


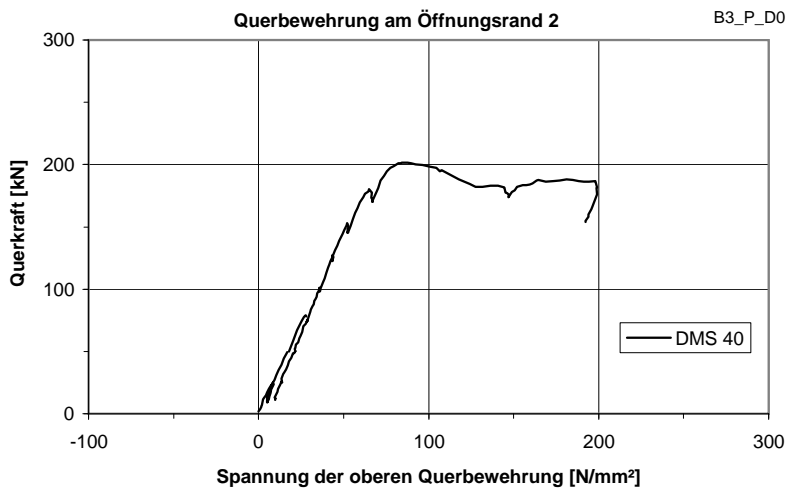
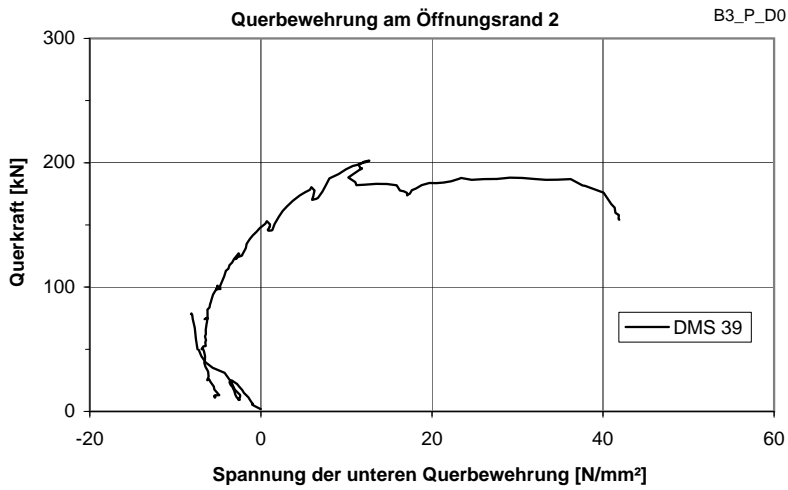
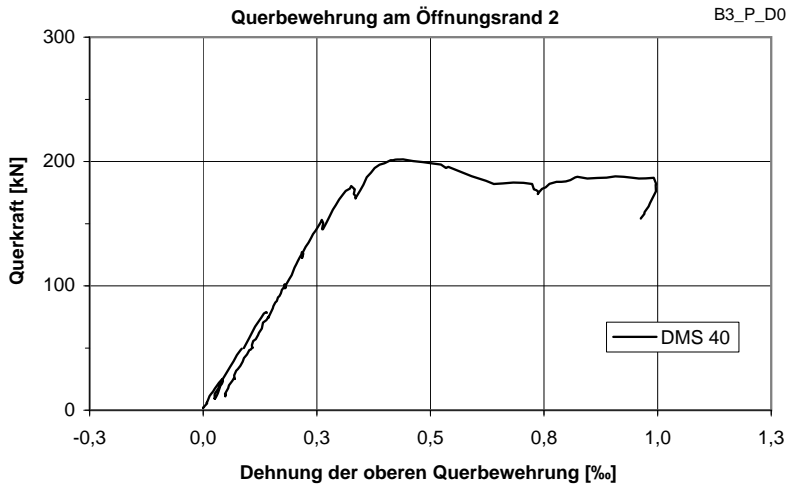


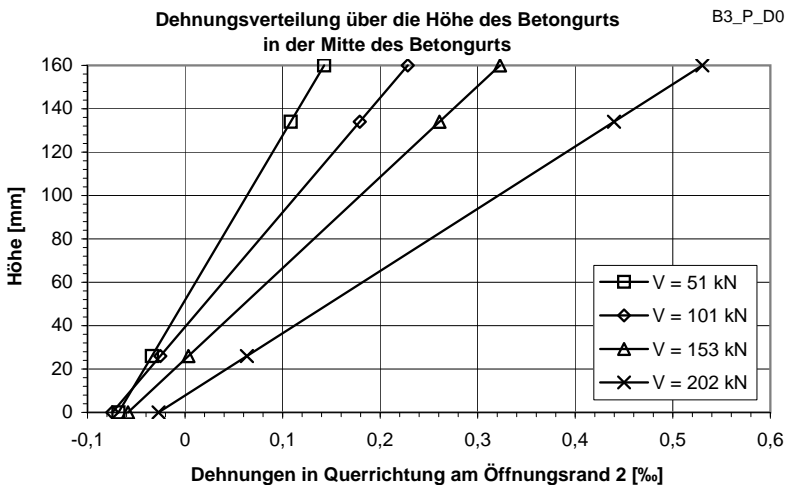
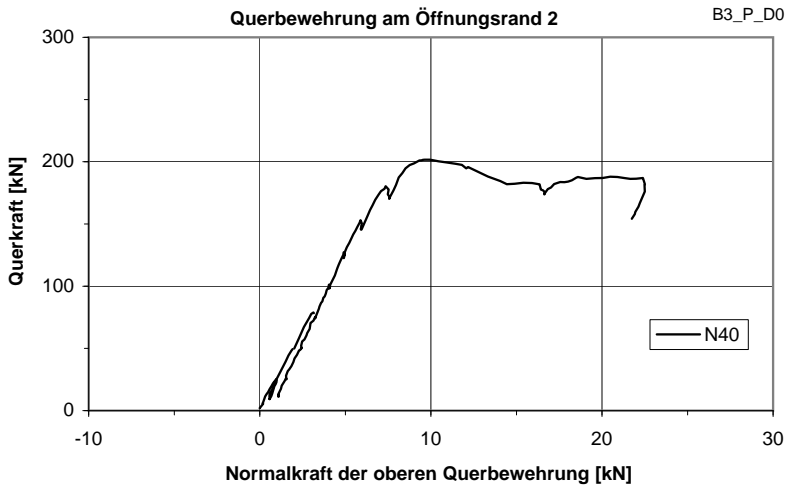
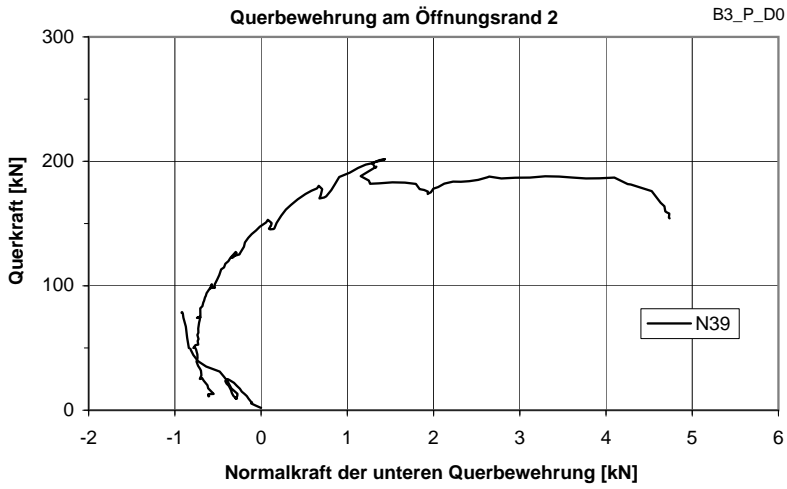
B.28.5. Querbewehrung



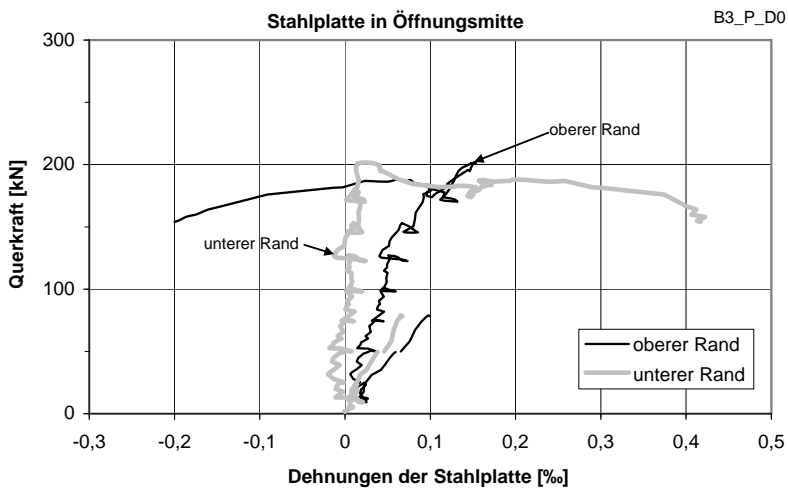
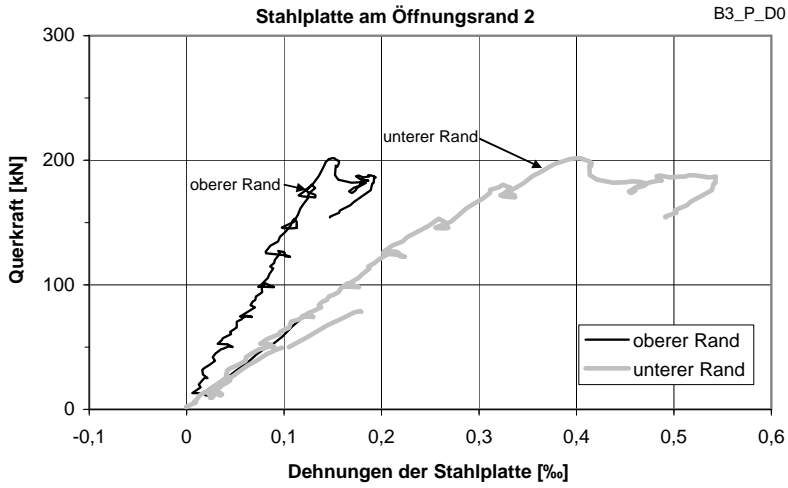


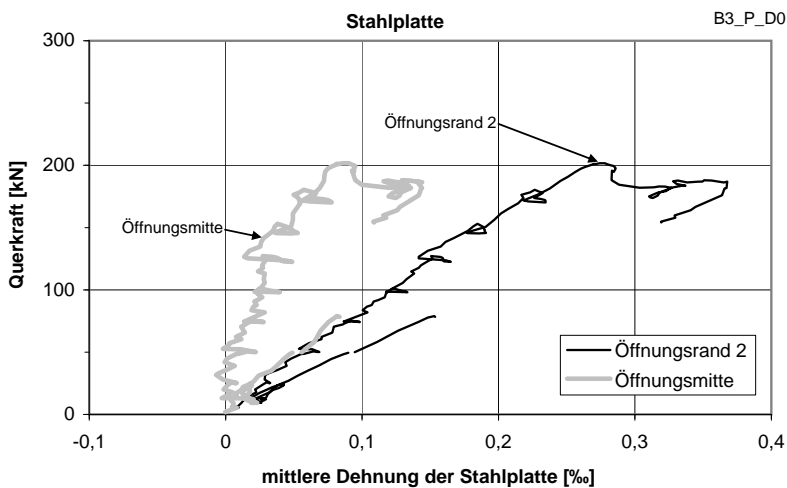
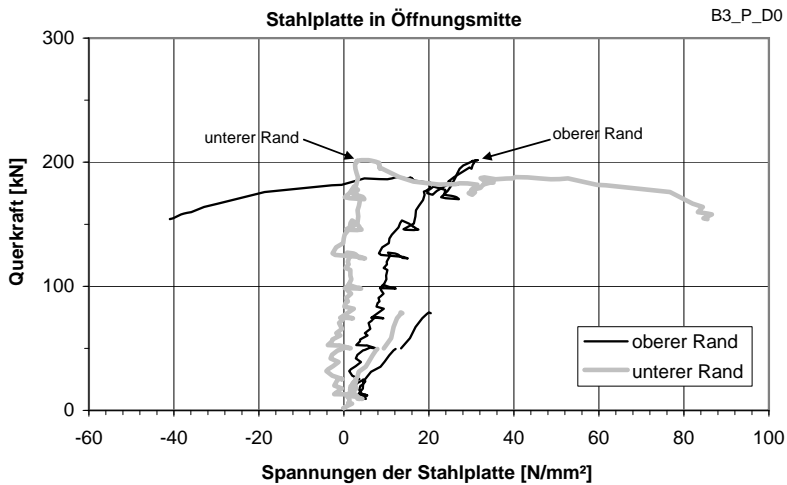
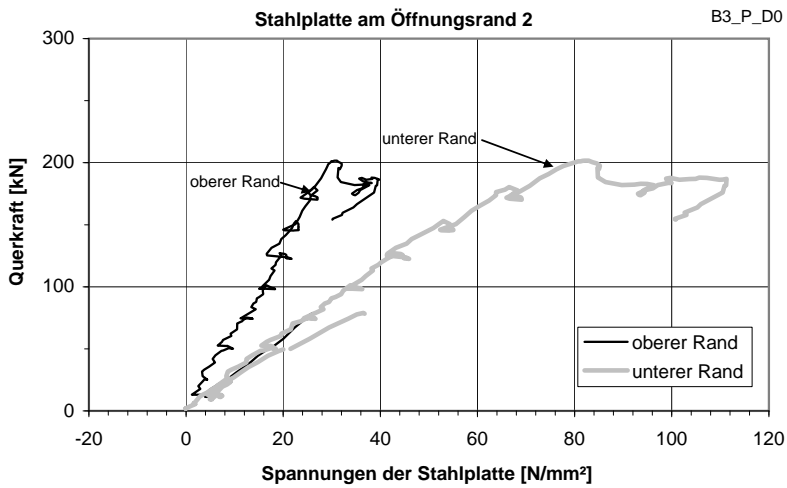


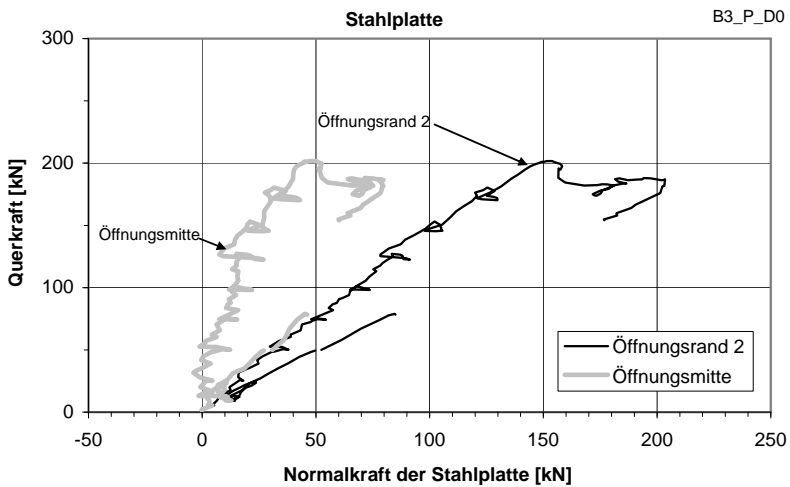
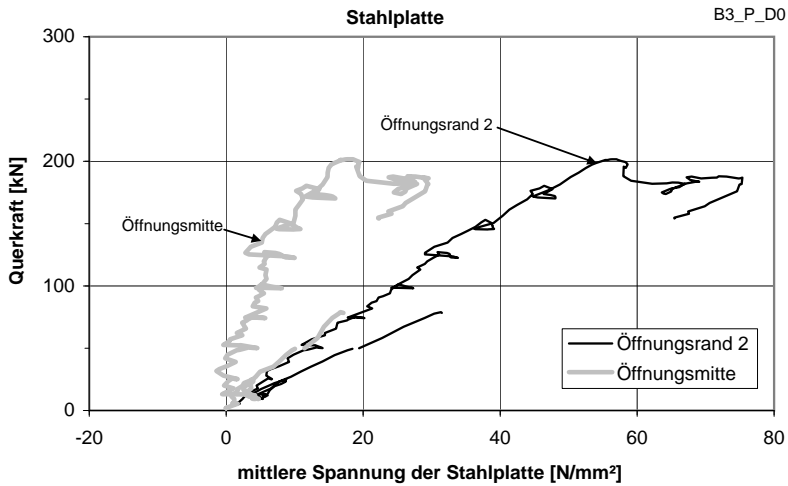




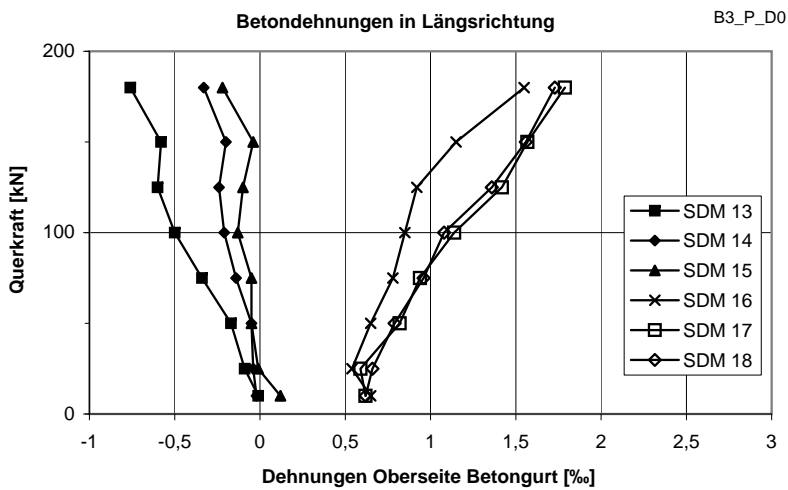
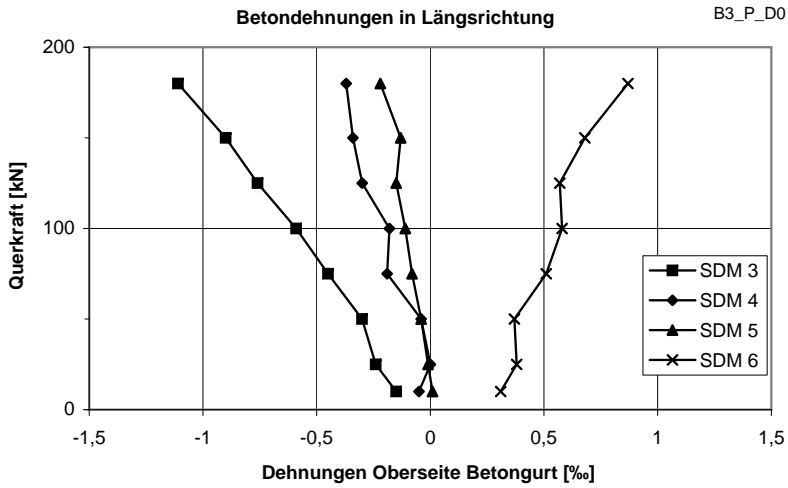
B.28.6. Stahlplatte

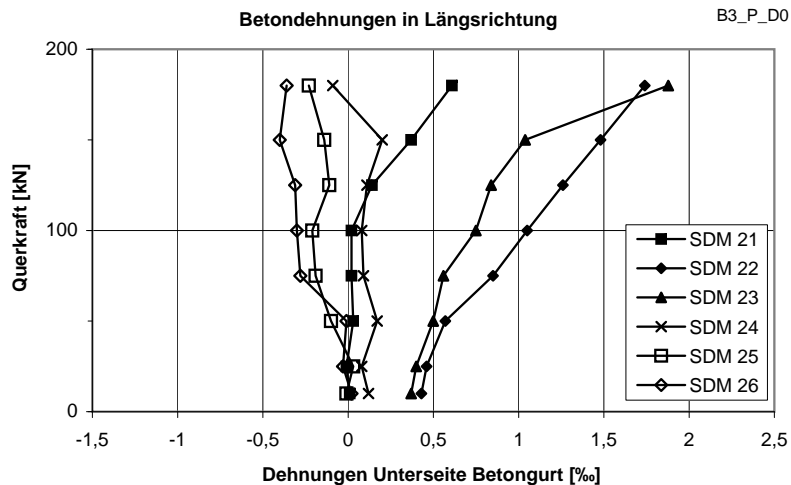
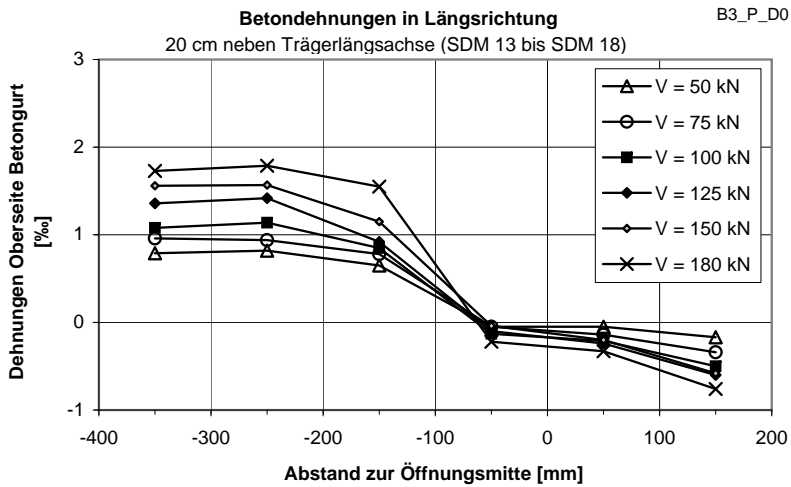
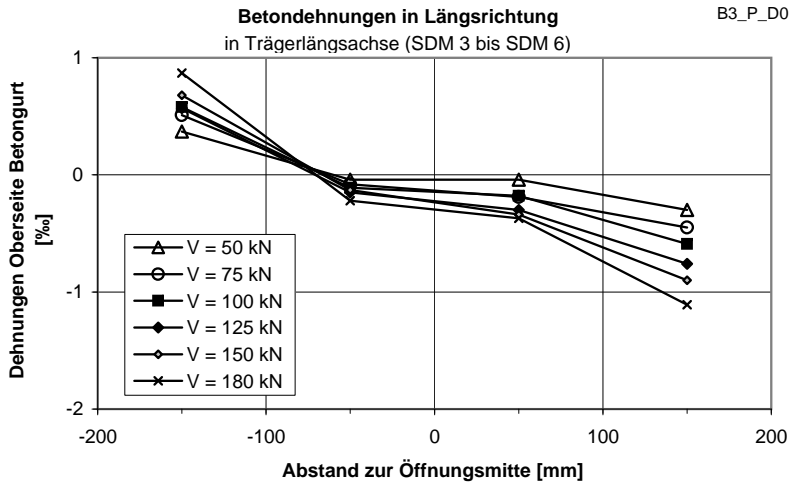


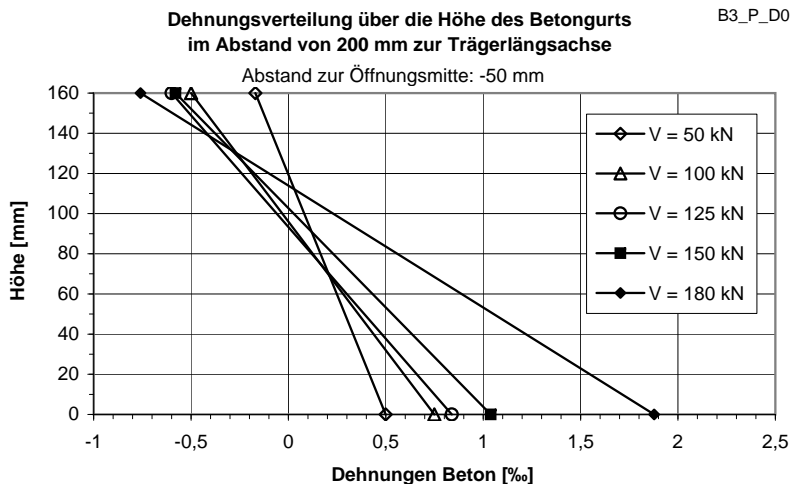
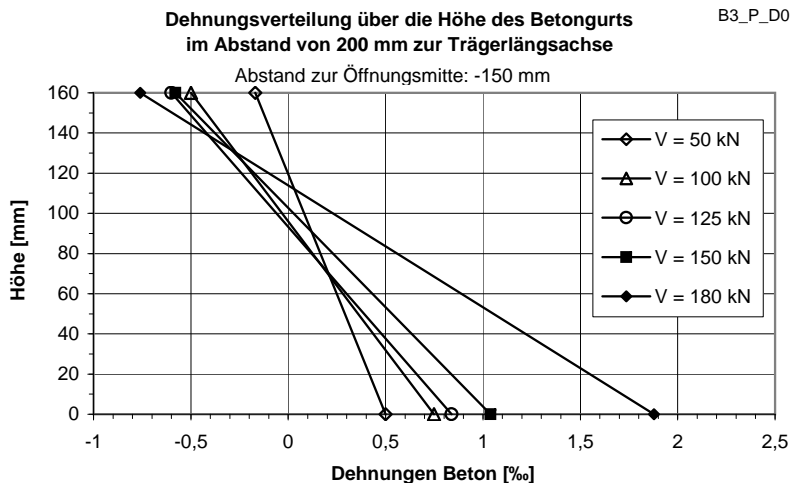
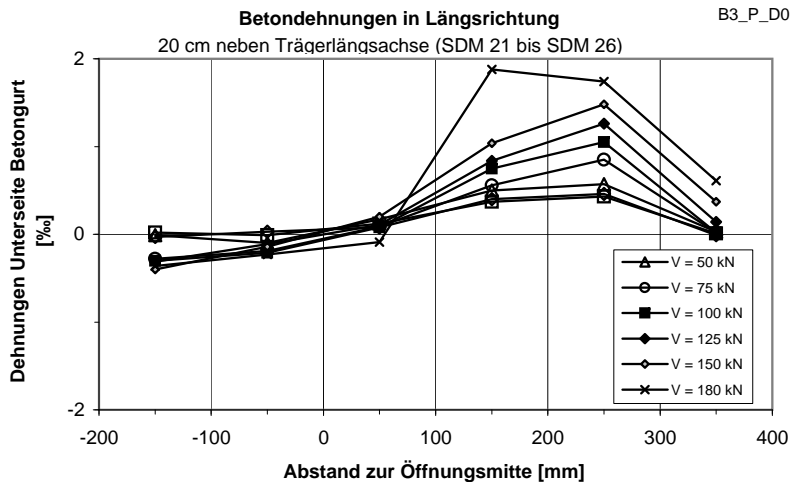


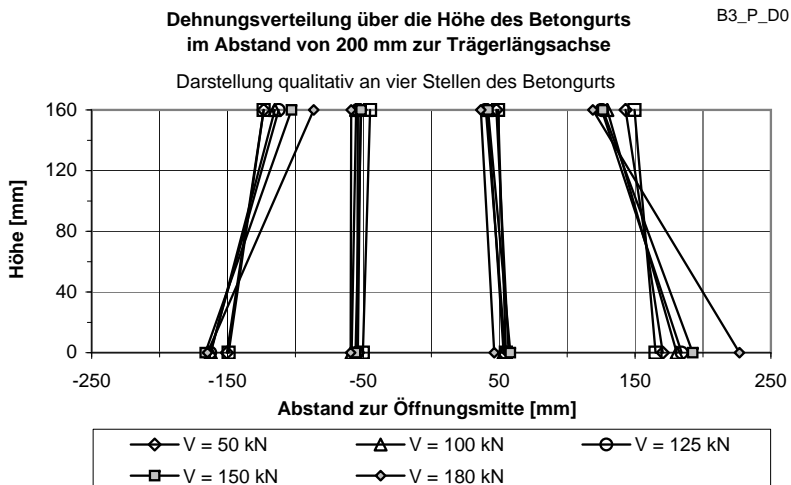
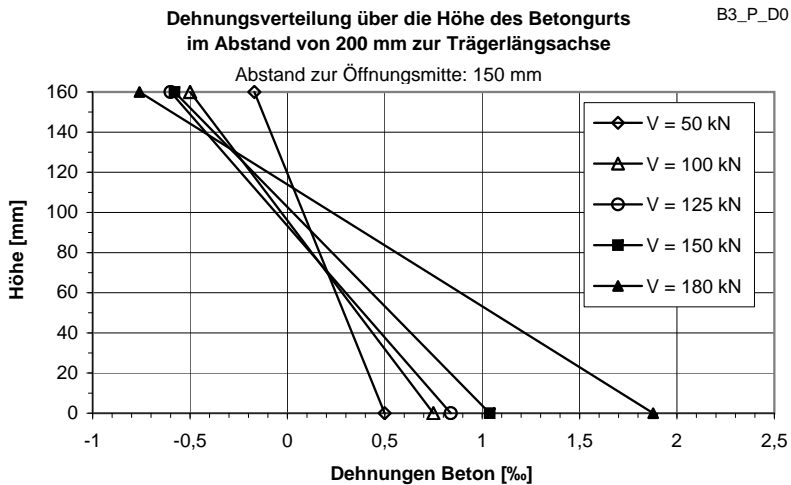
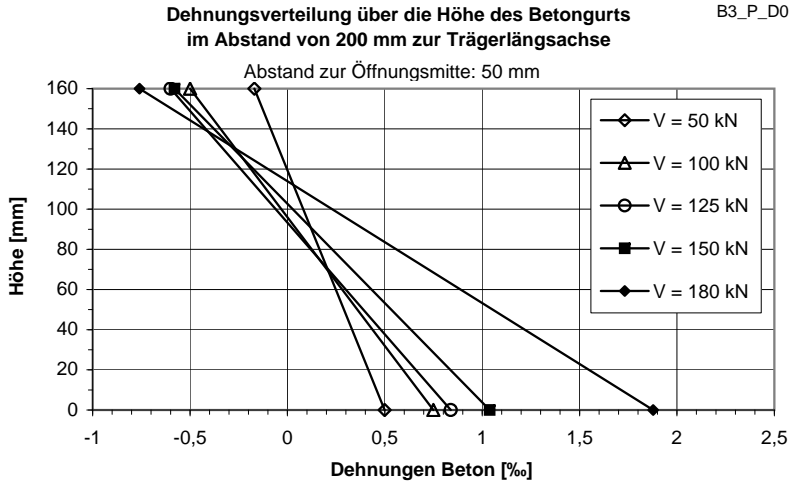


B.28.7. Betondehnungen







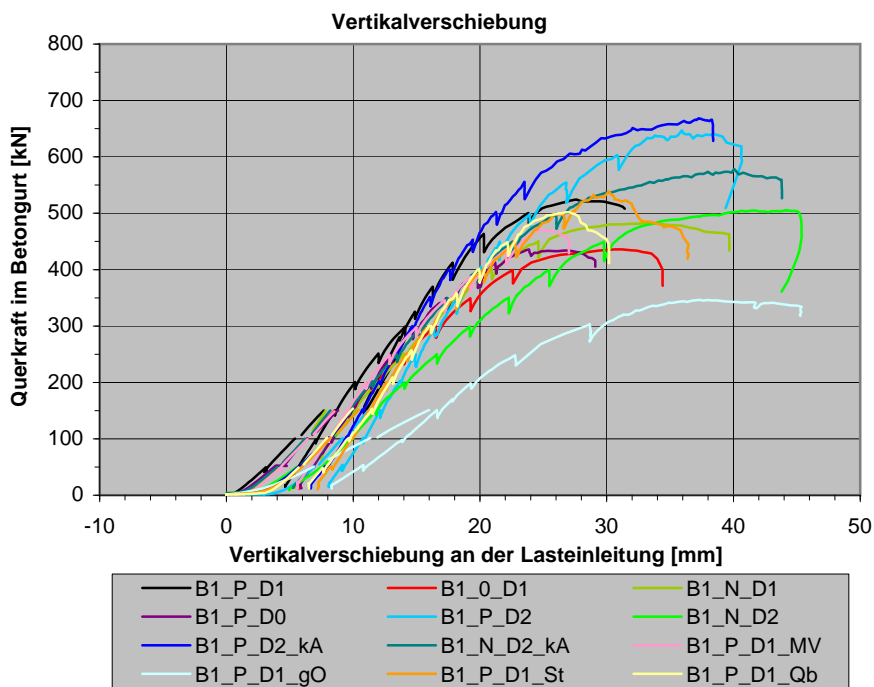


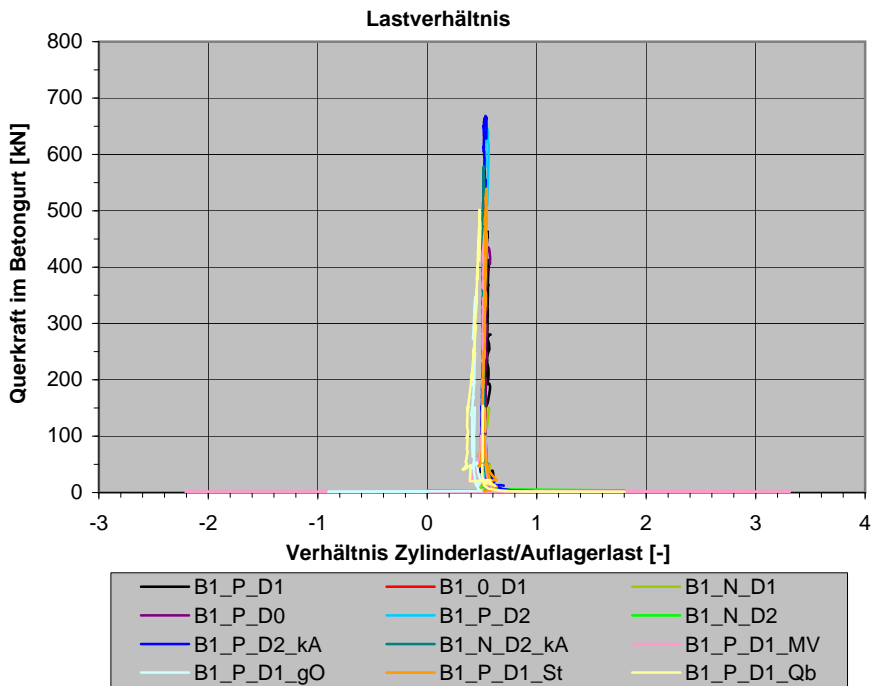
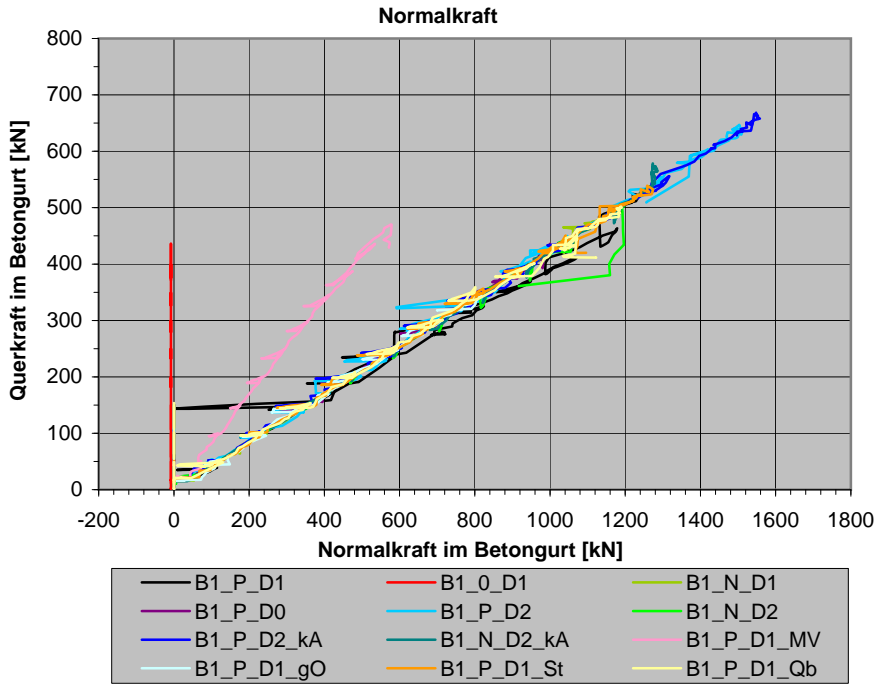
C. Vergleichsdiagramme

In diesem Kapitel des Anhangs sind die Diagramme abgebildet, in denen einzelne Messwerte von jedem Versuch eines Bereichs miteinander verglichen werden.

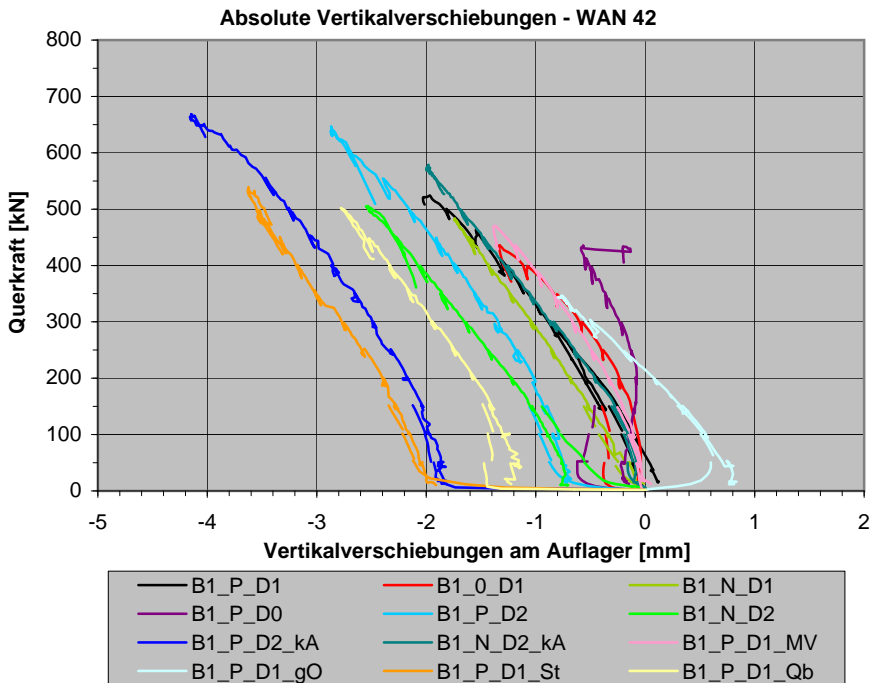
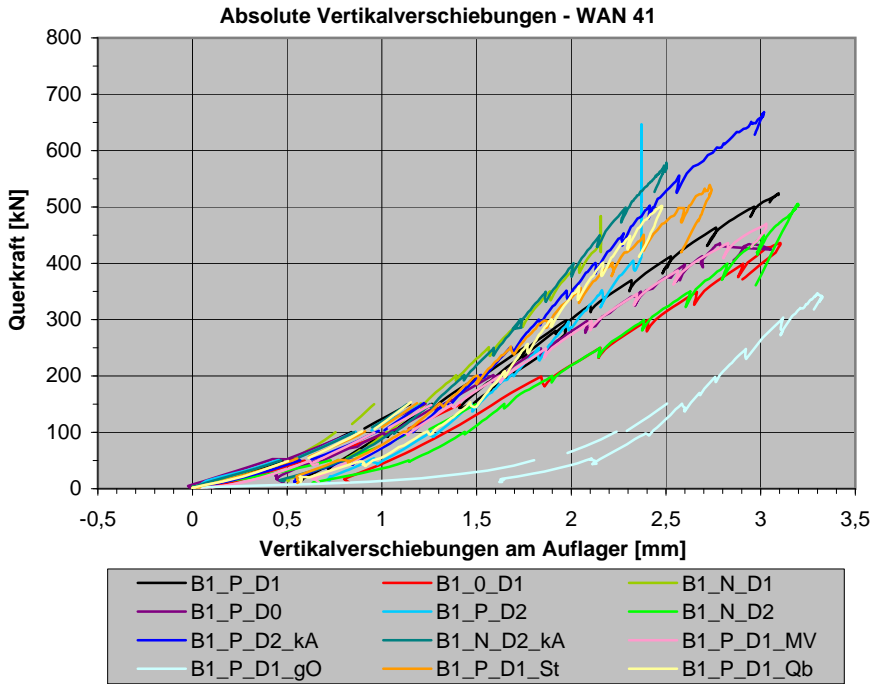
C.1. Bereich 1

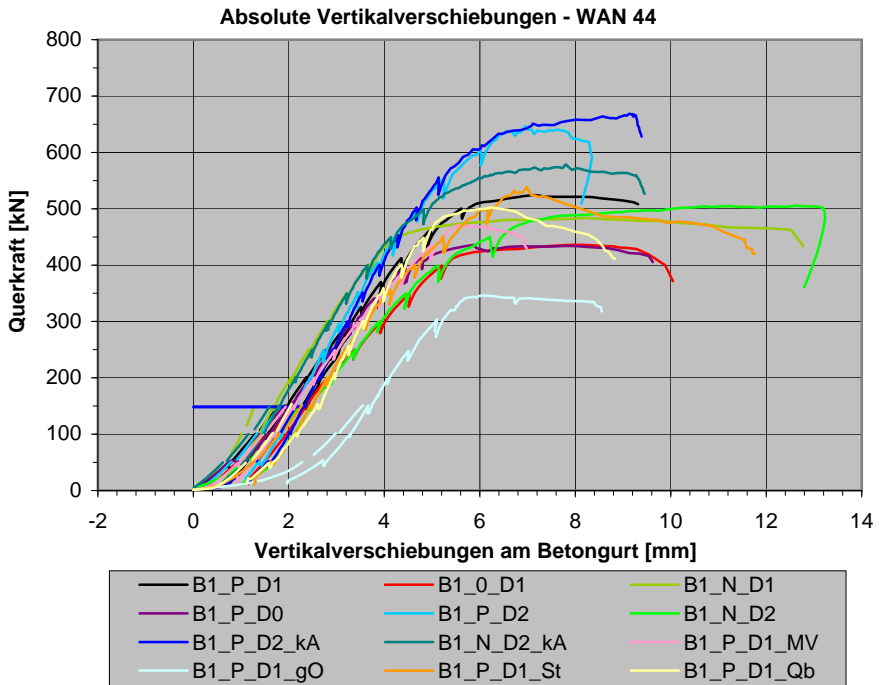
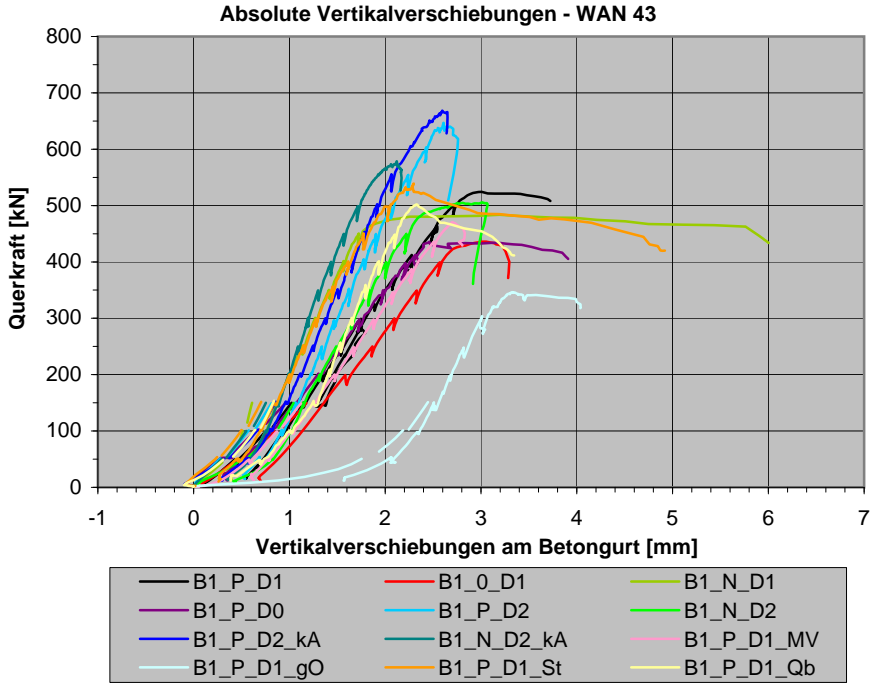
C.1.1. Kräfte

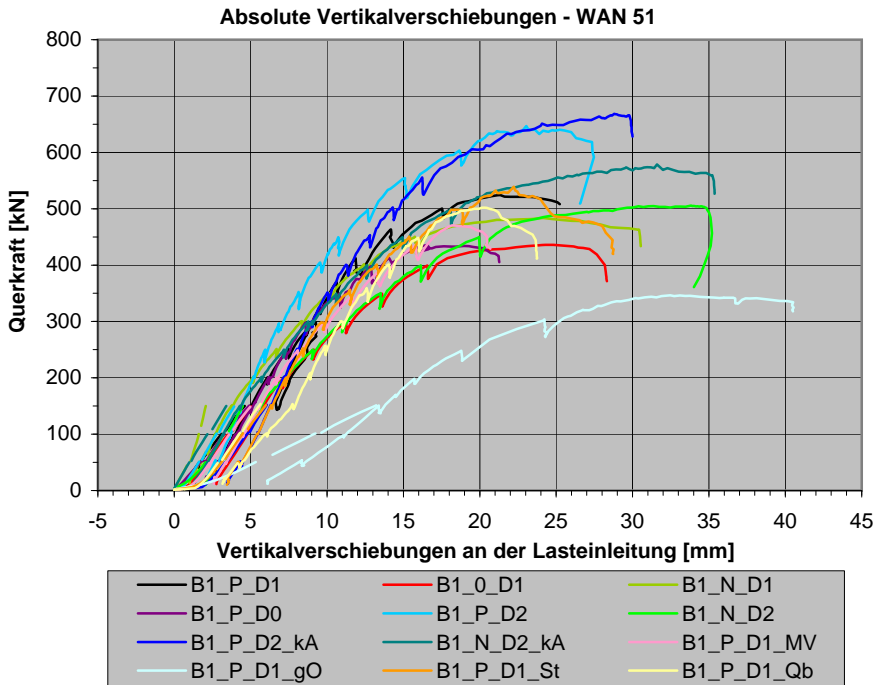
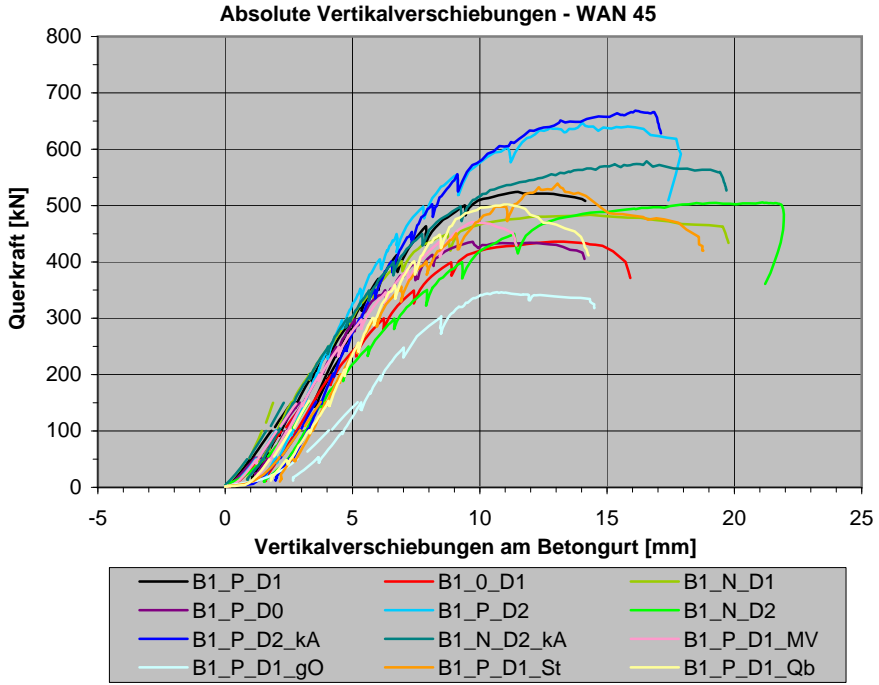


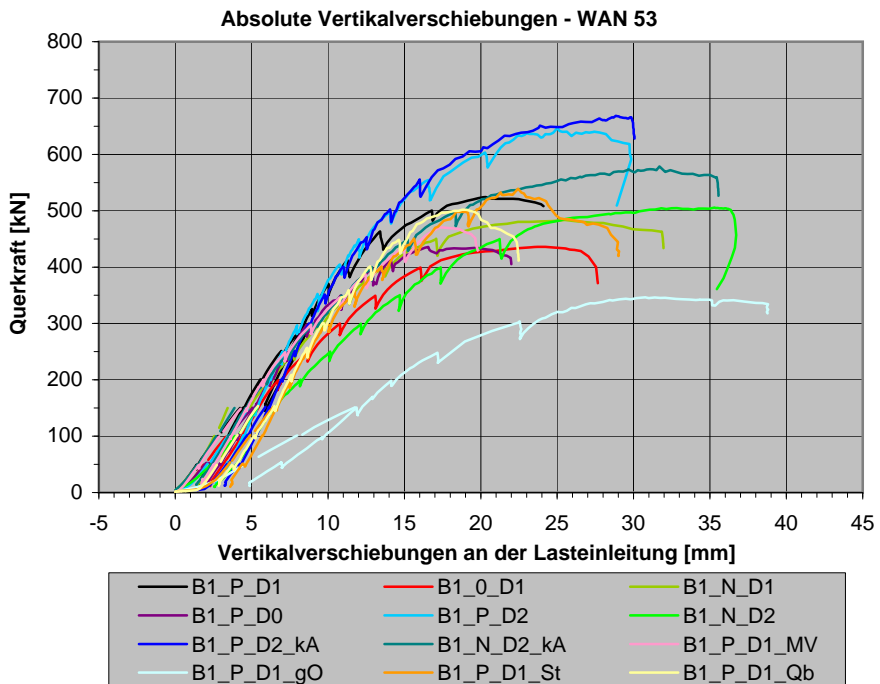
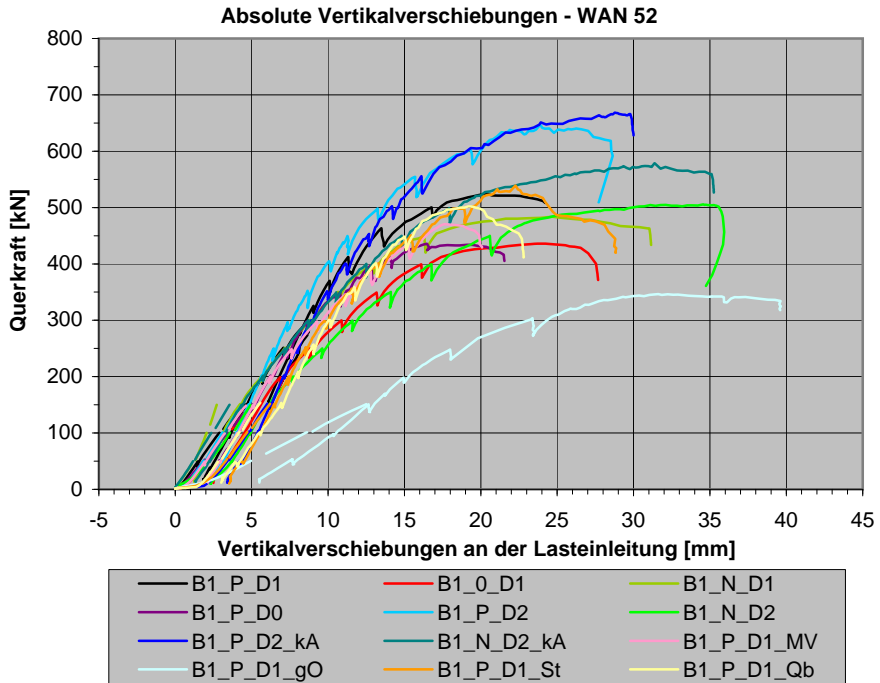


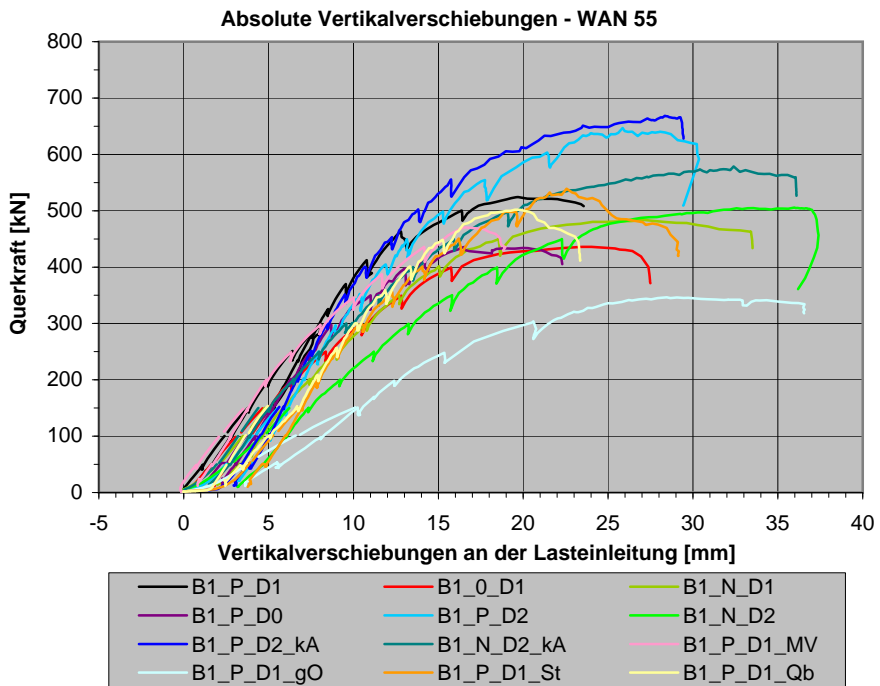
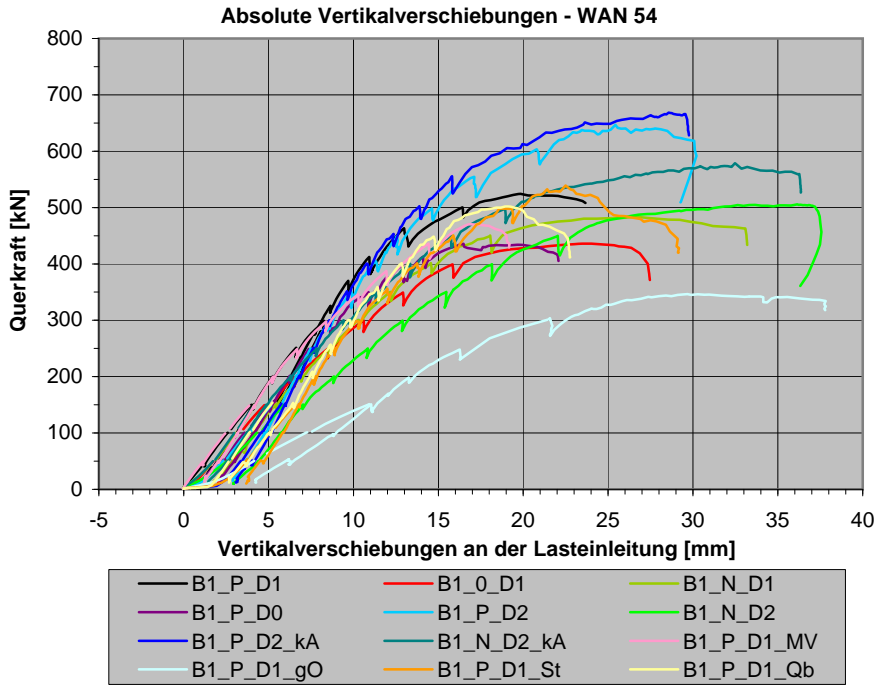
C.1.2. Verformungen

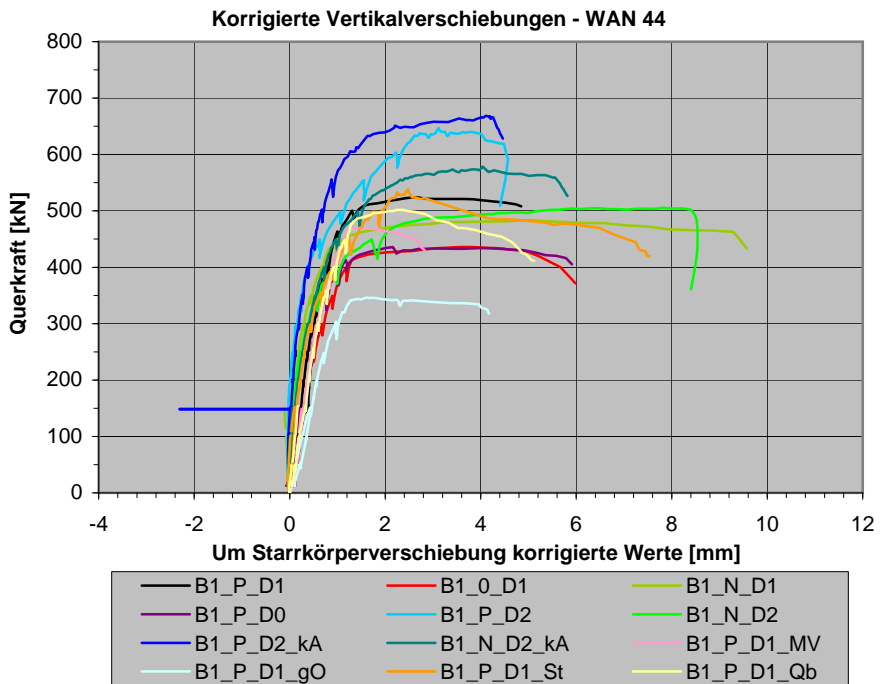
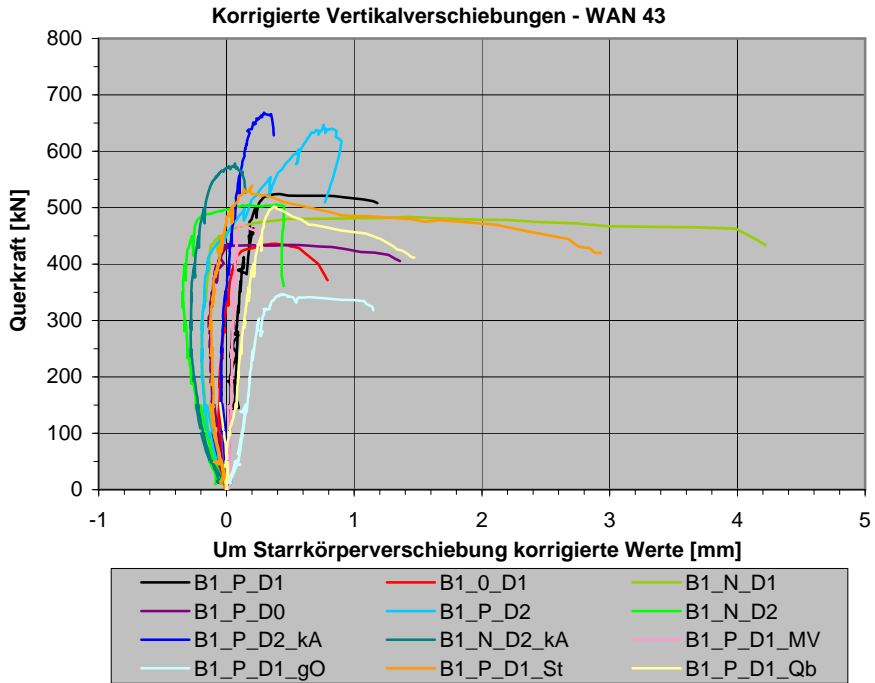


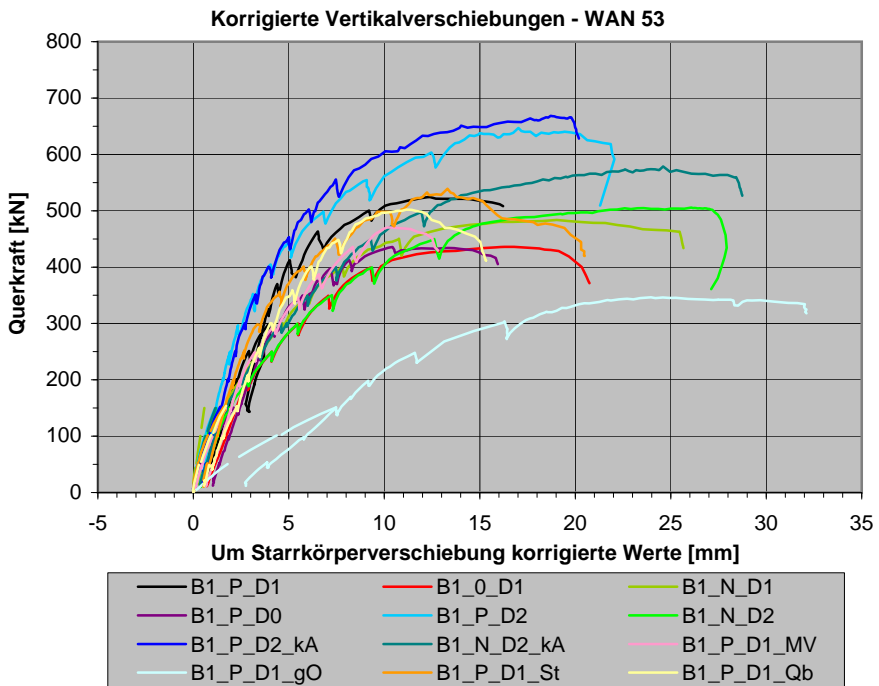
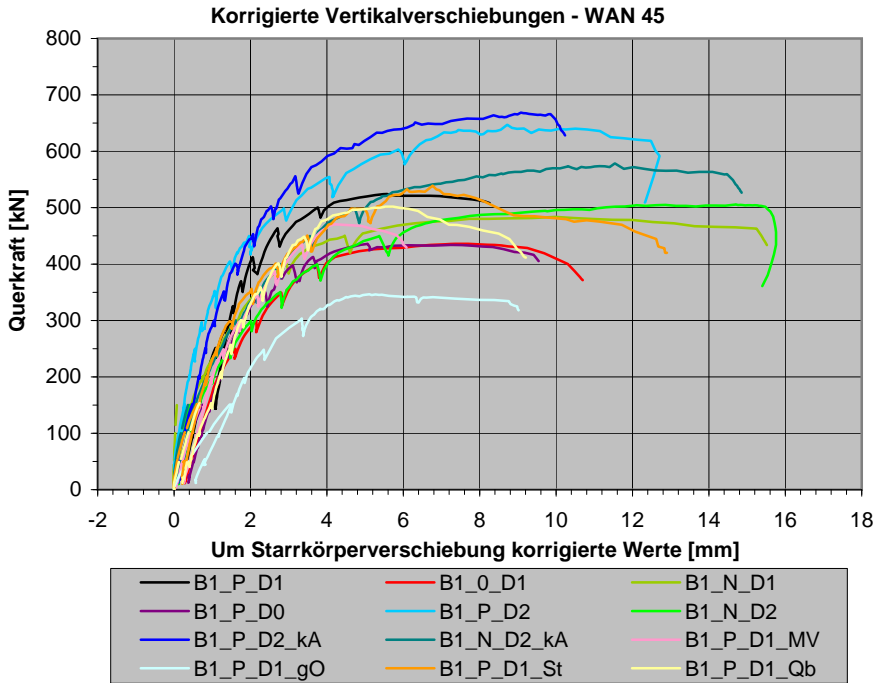


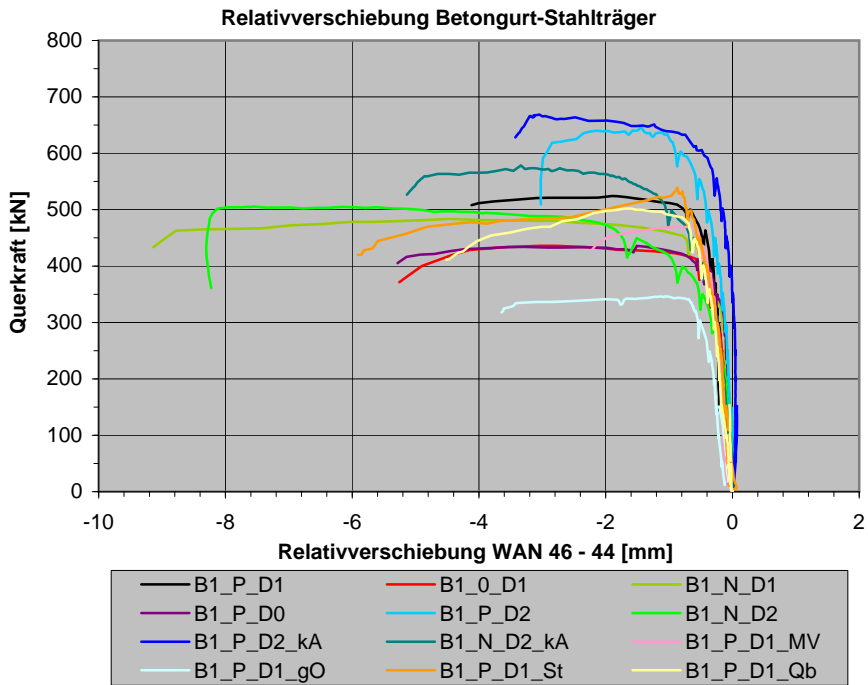




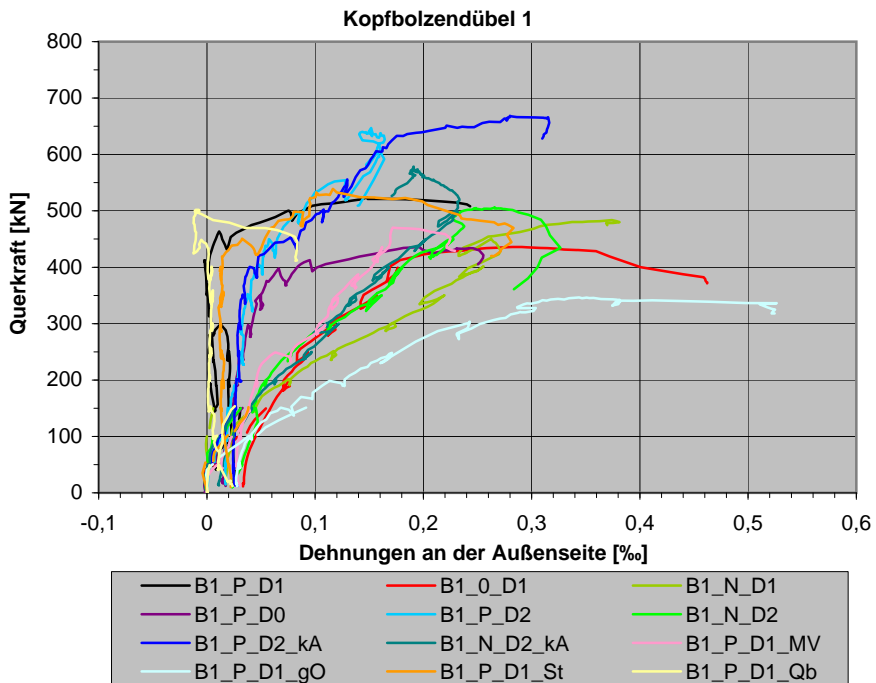
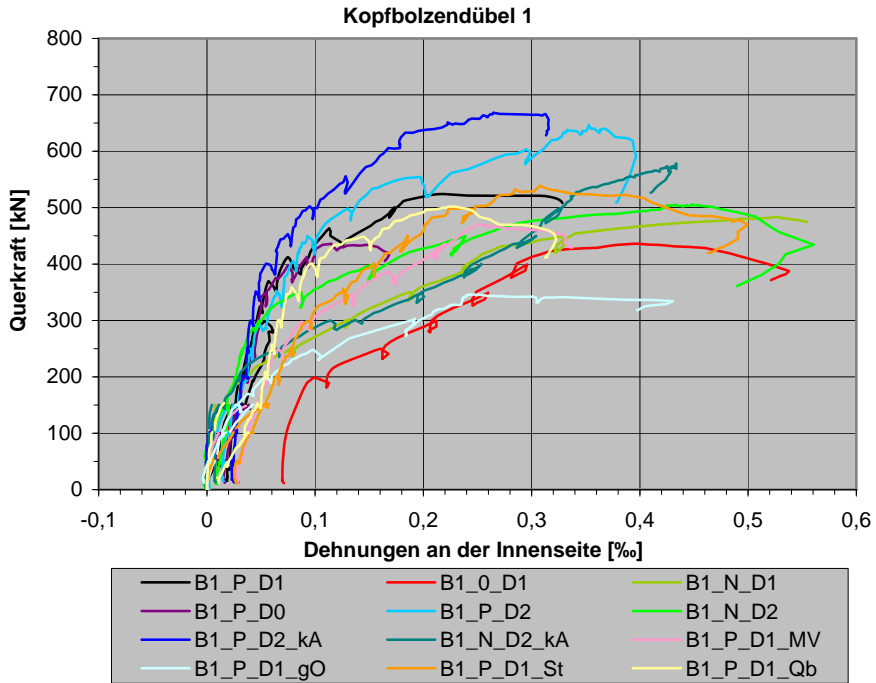


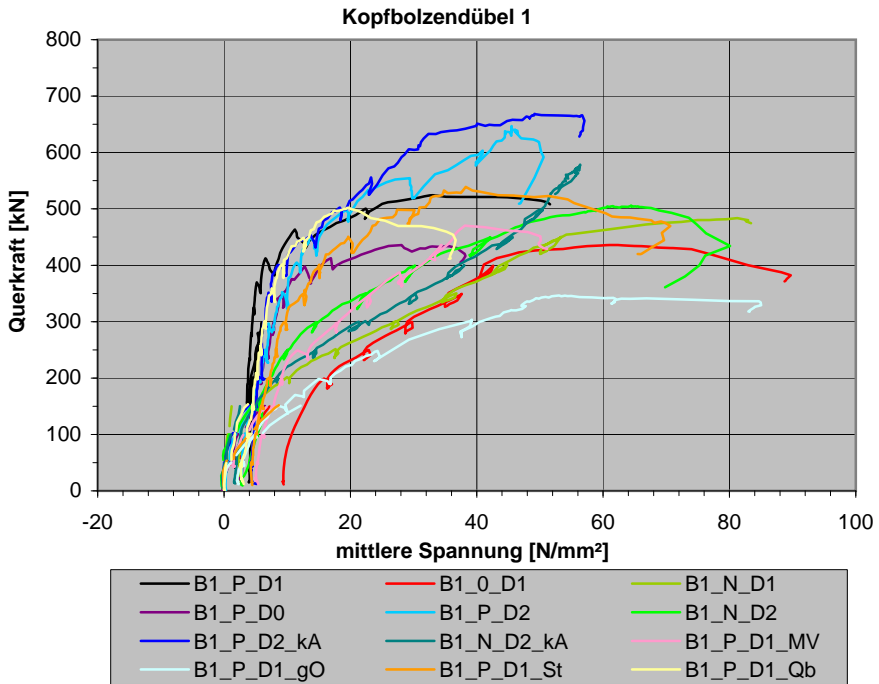
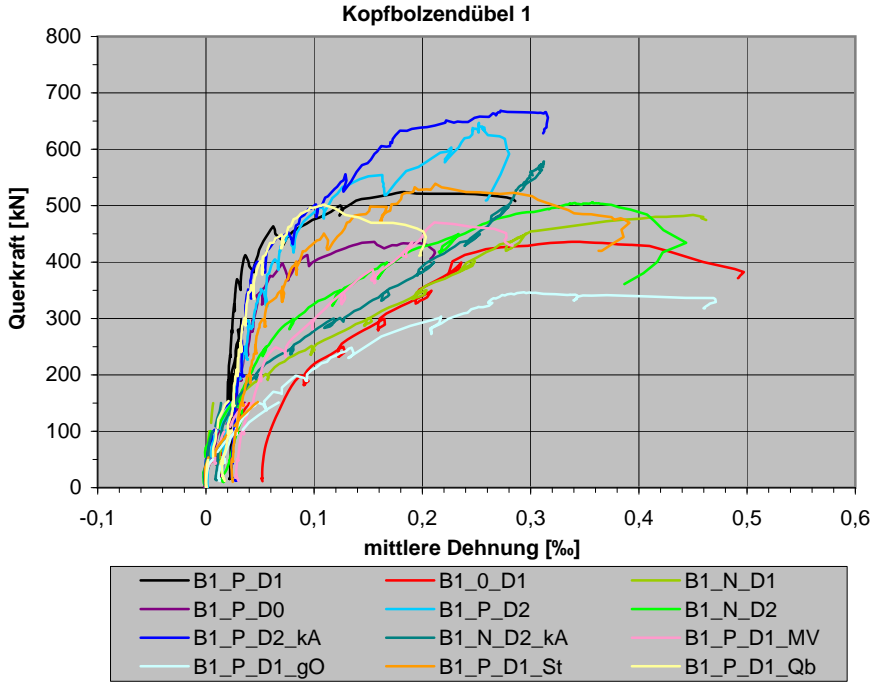


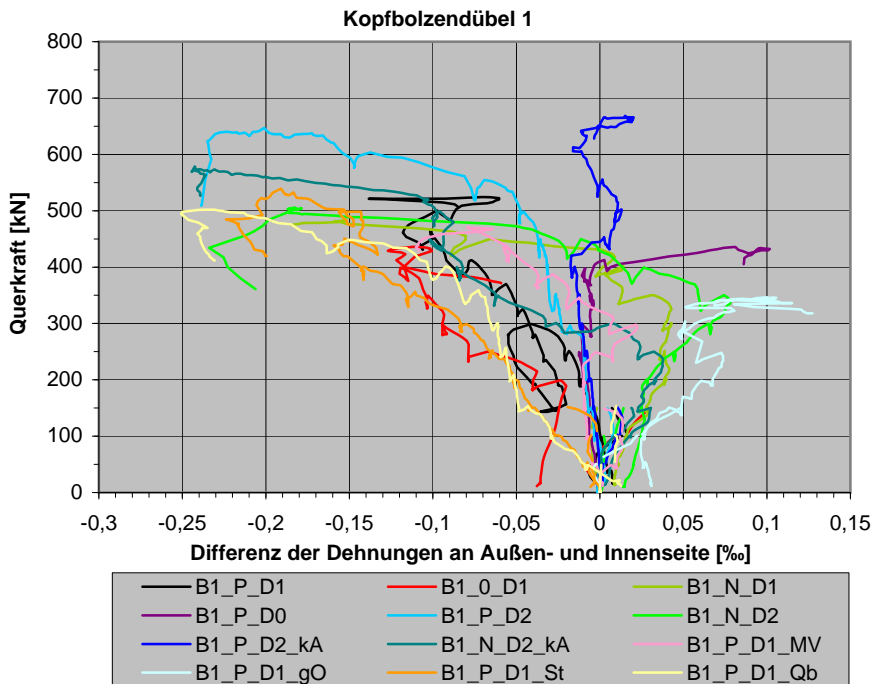
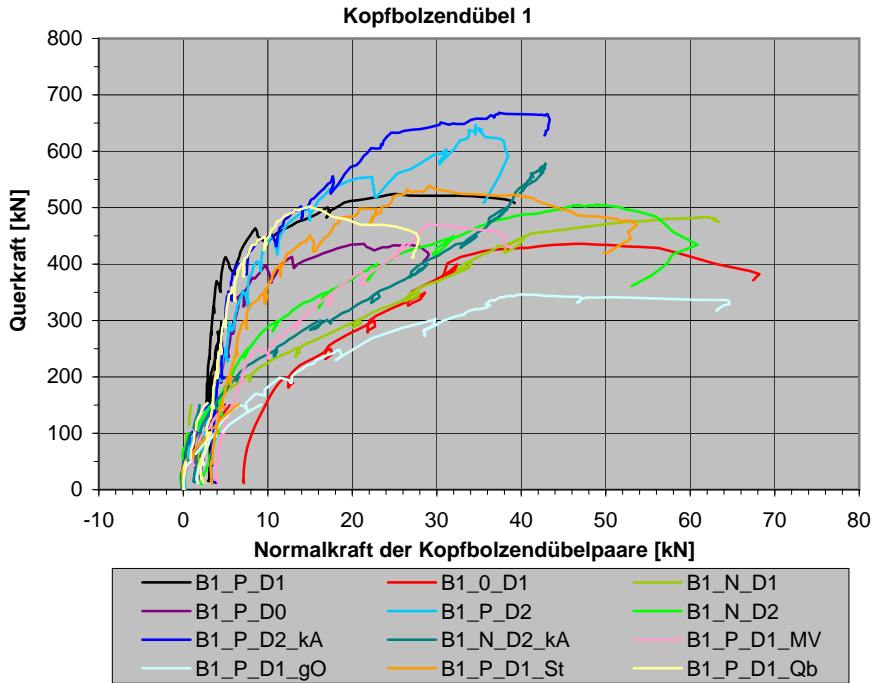


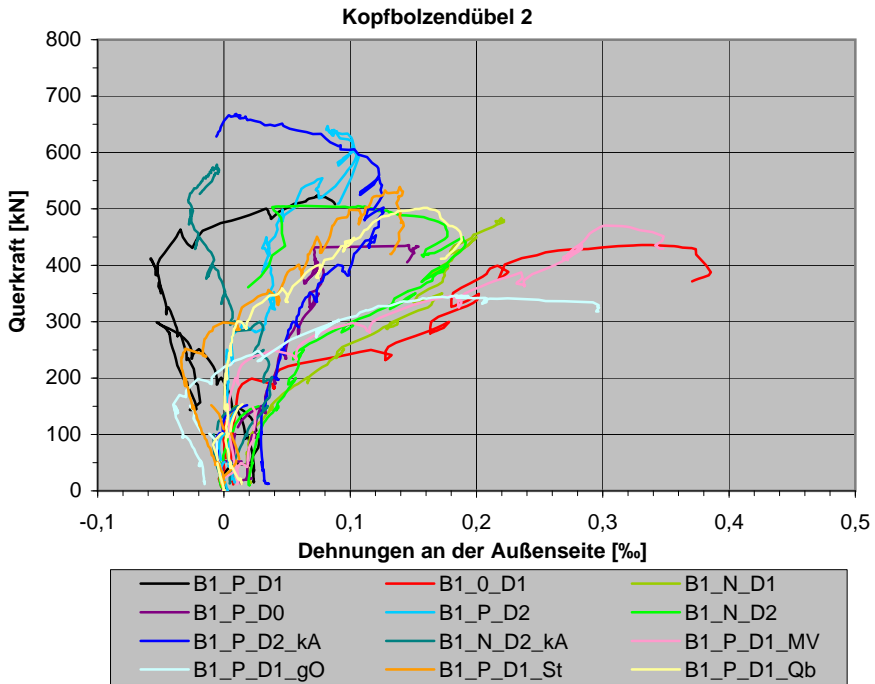
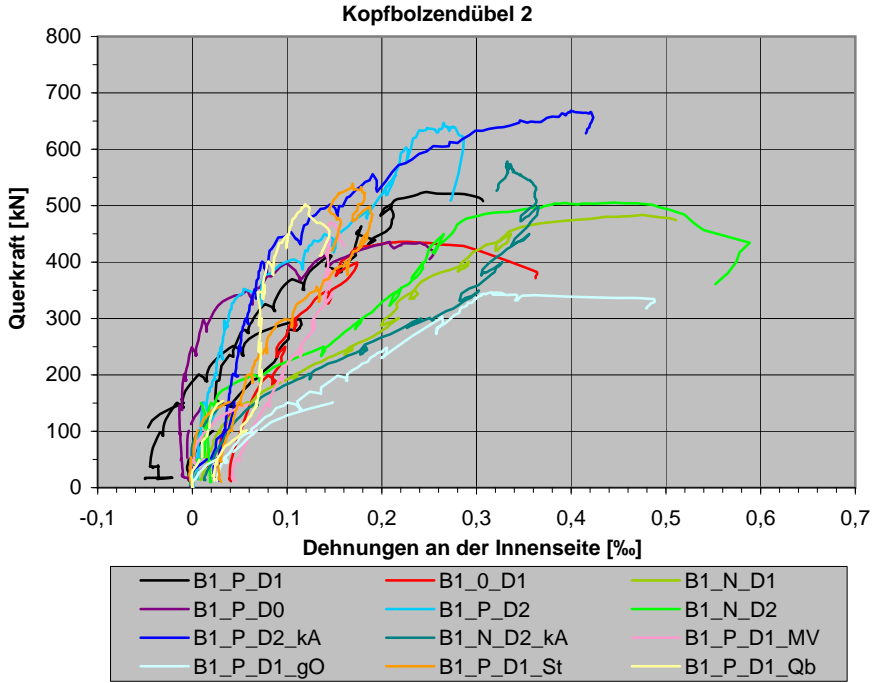


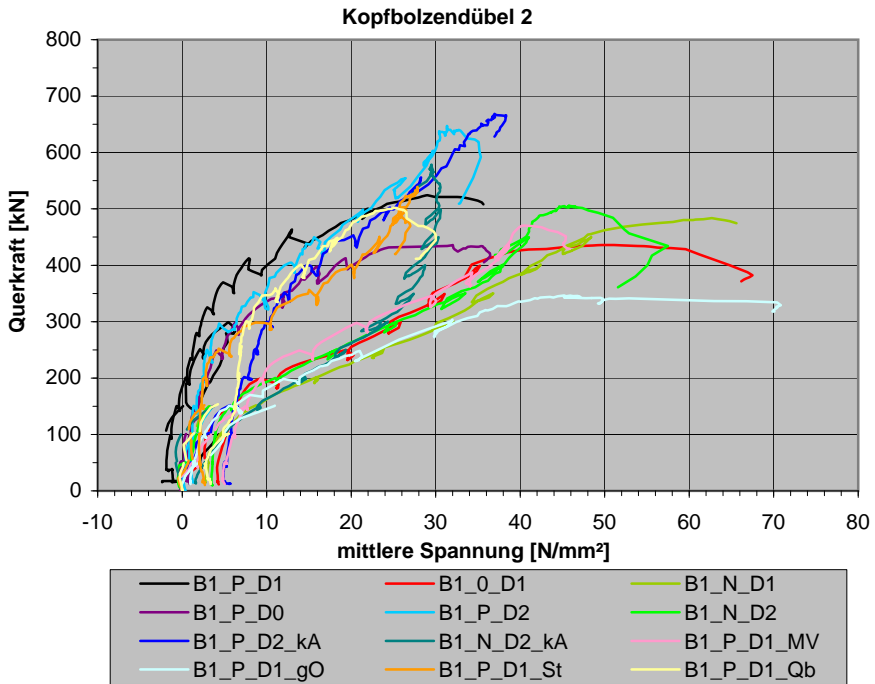
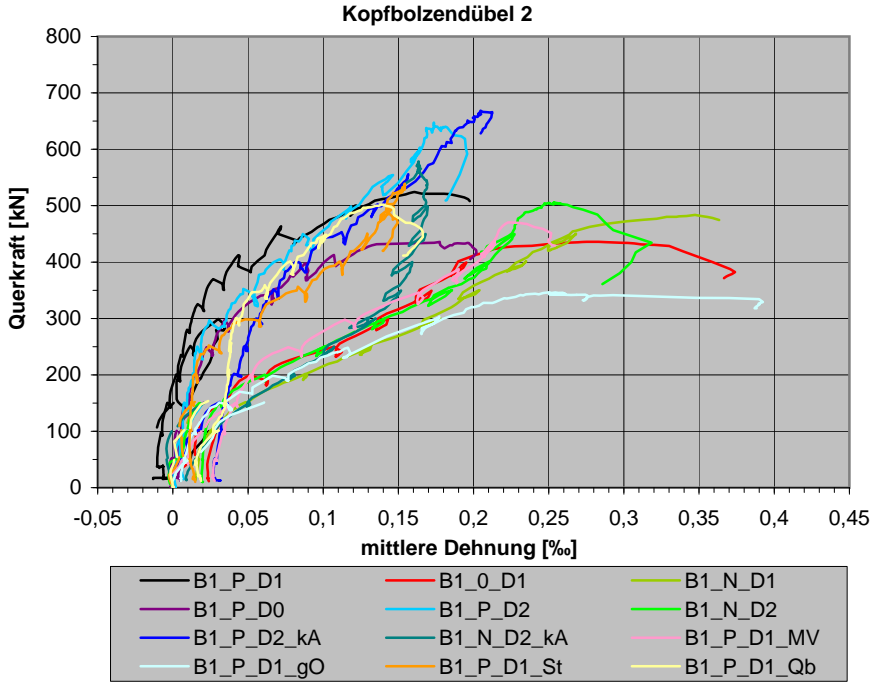
C.1.3. Kopfbolzendübel

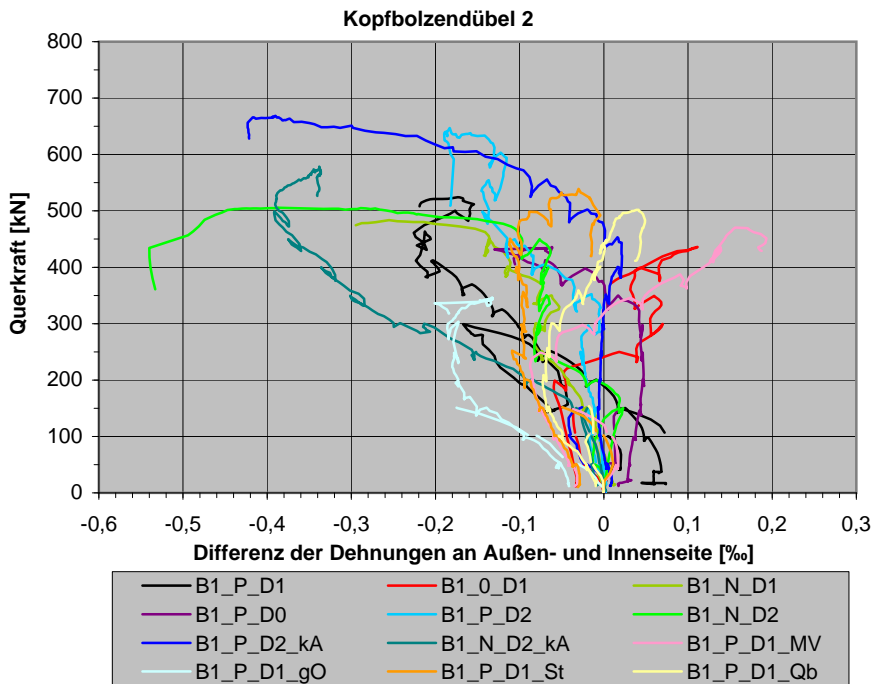
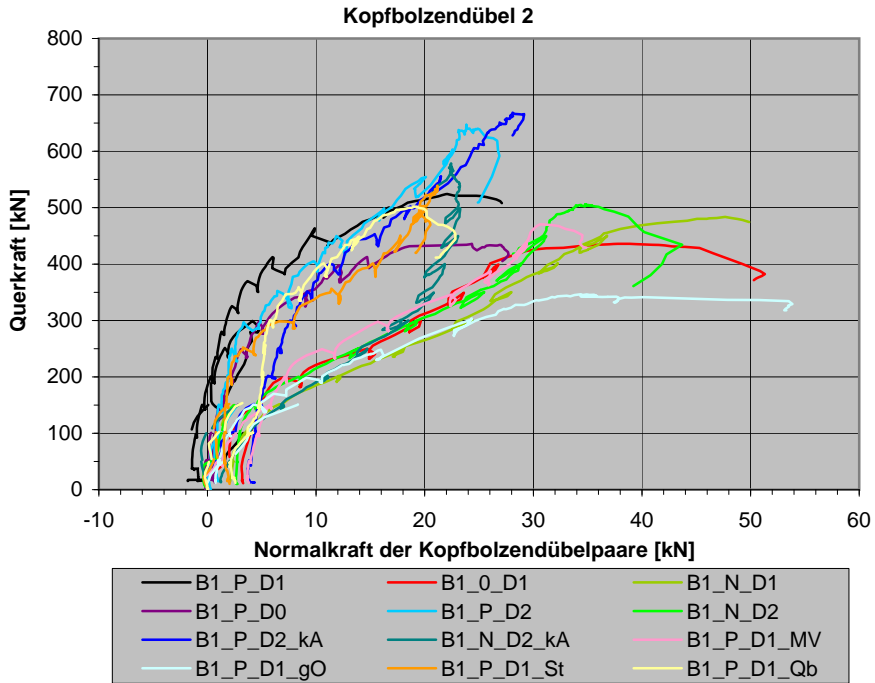


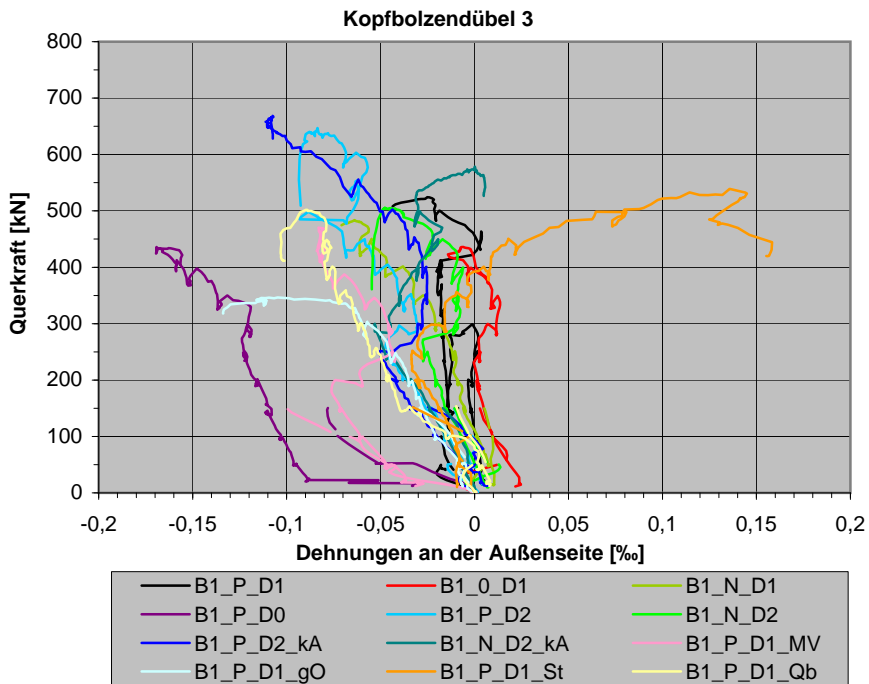
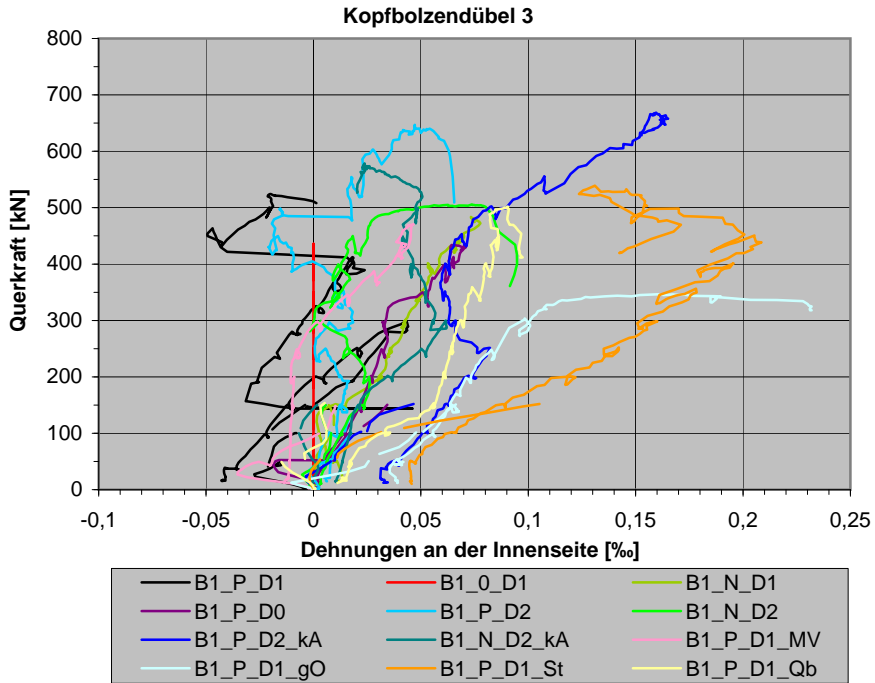


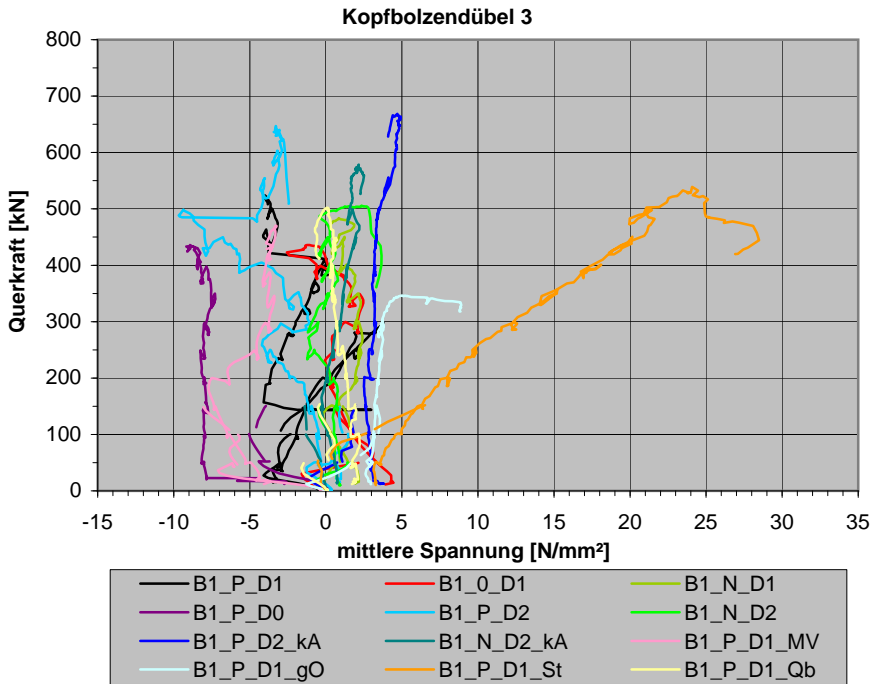
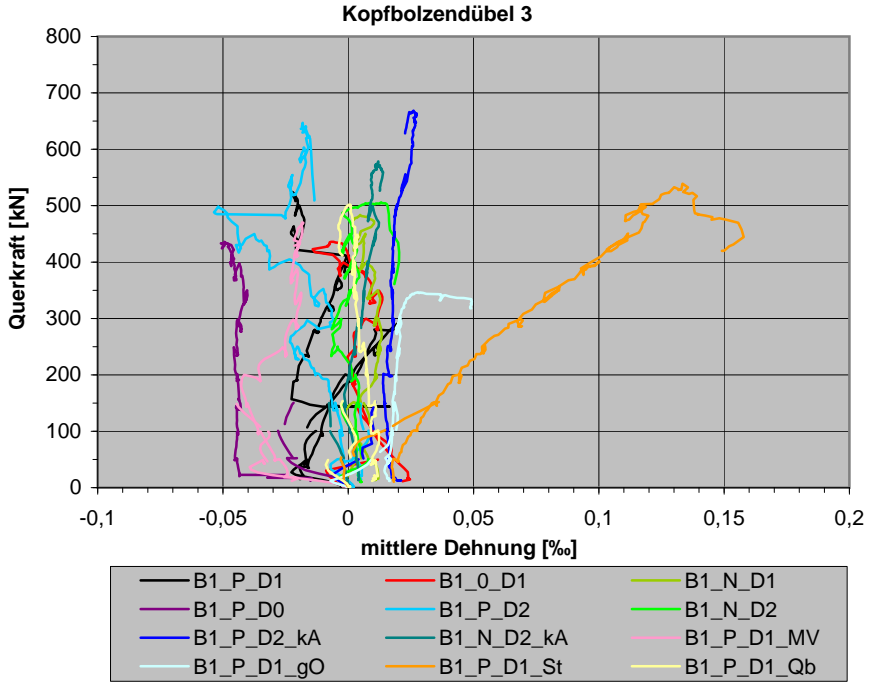


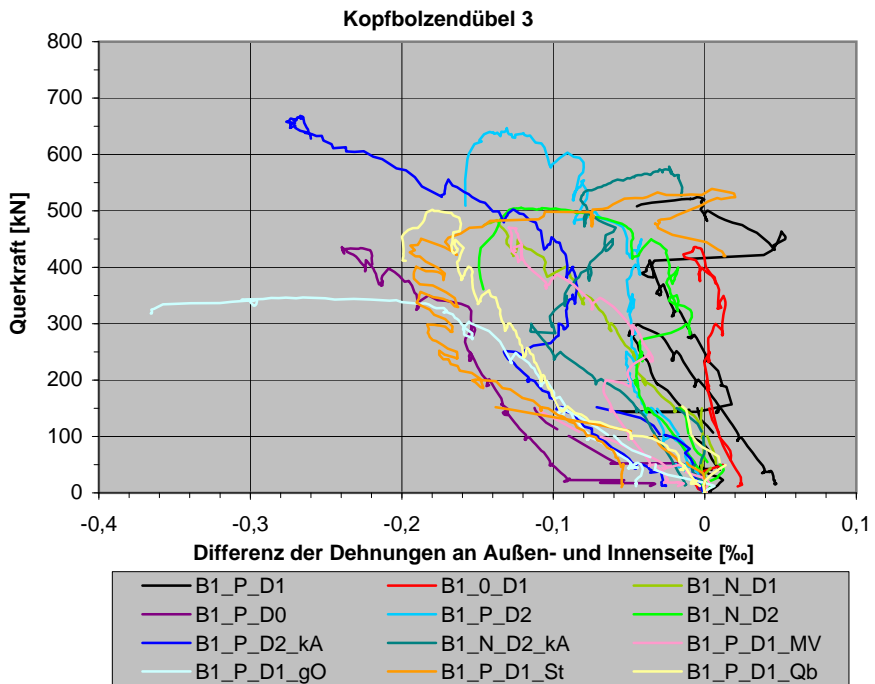
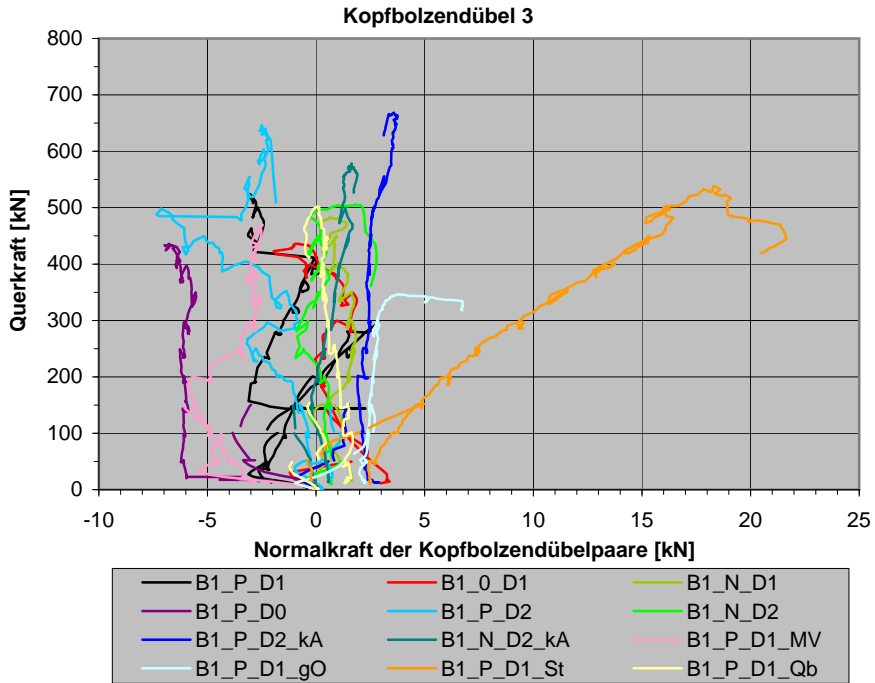


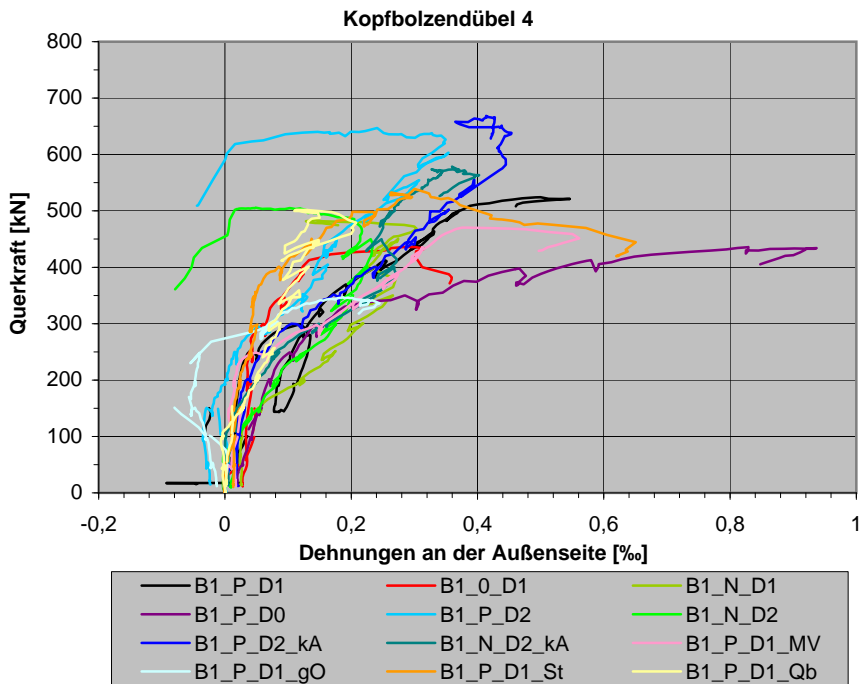
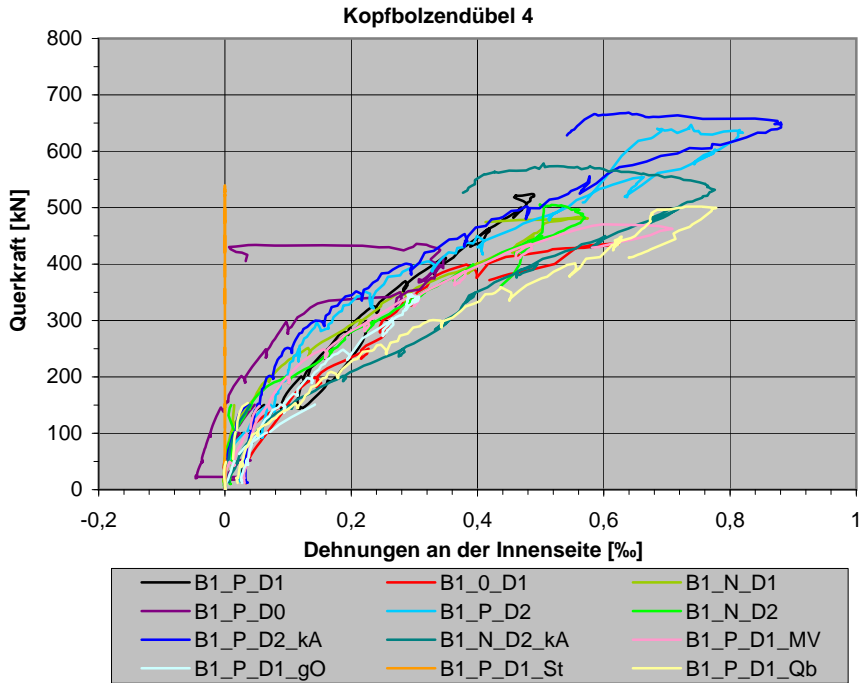


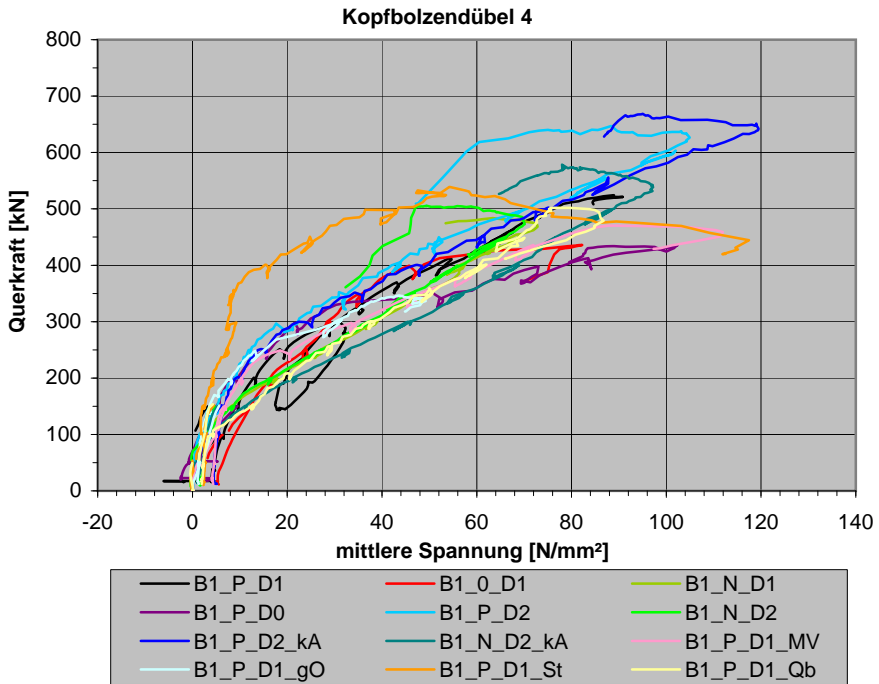
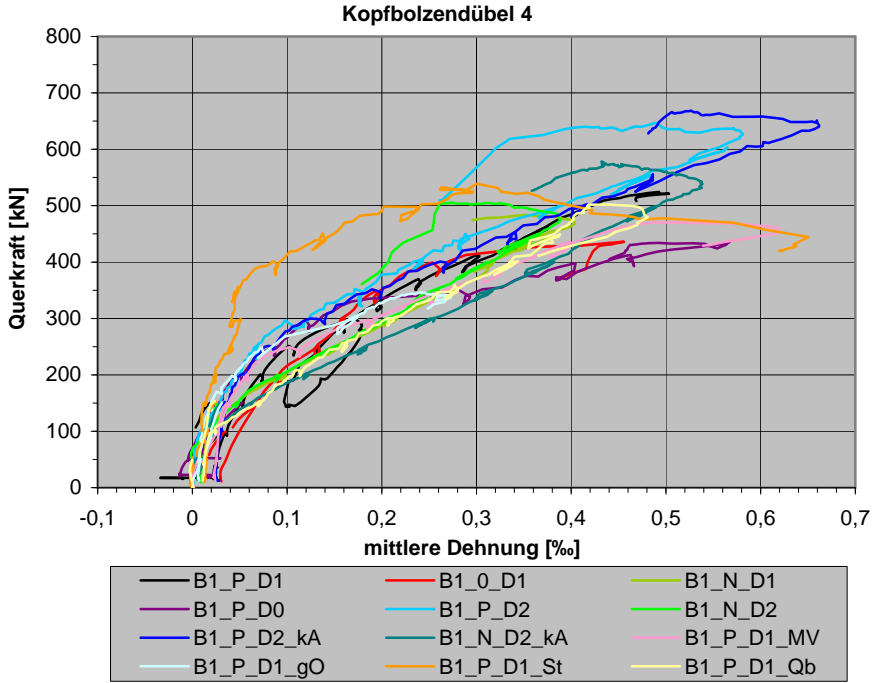


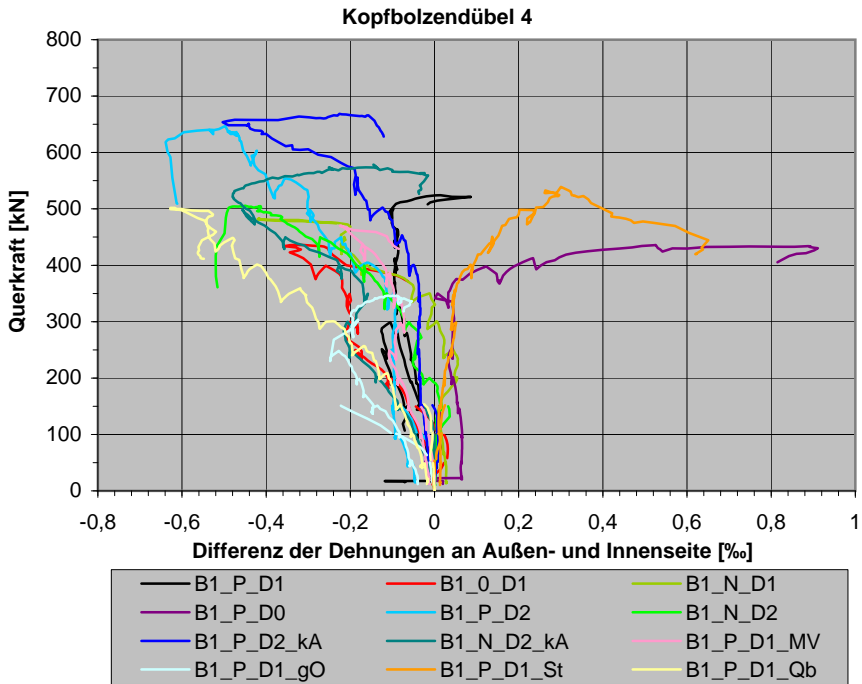
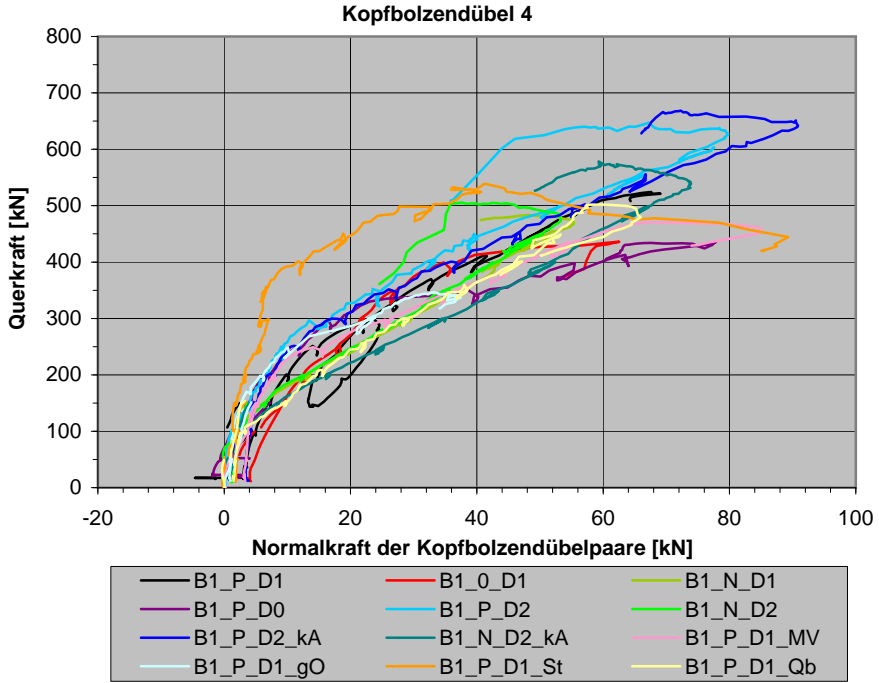


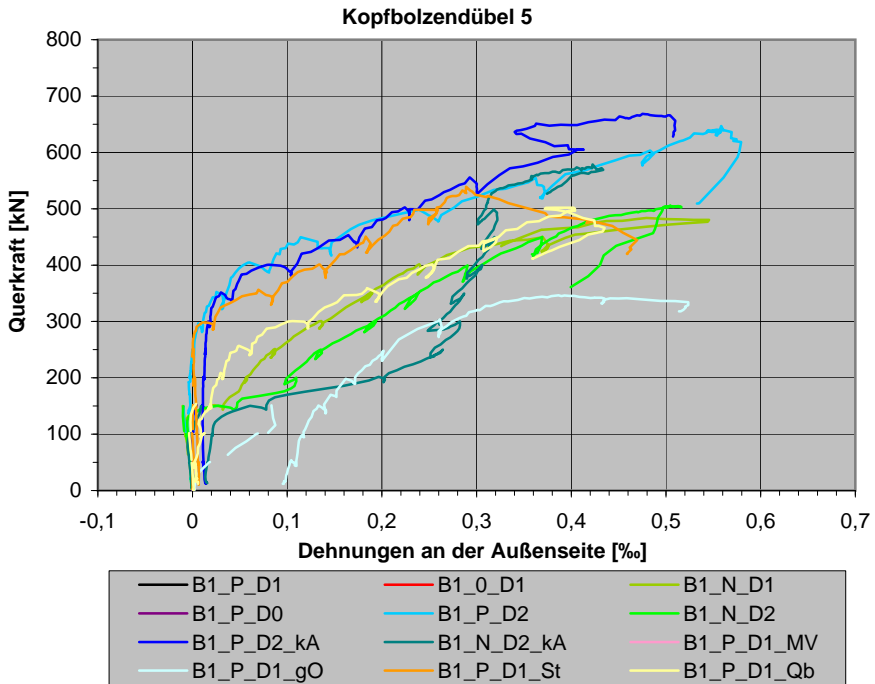
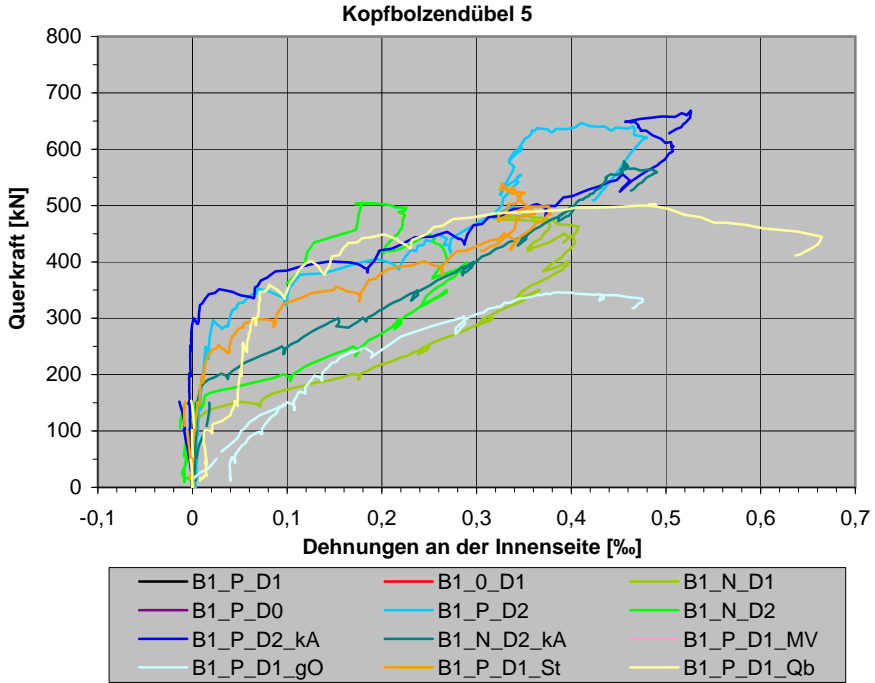


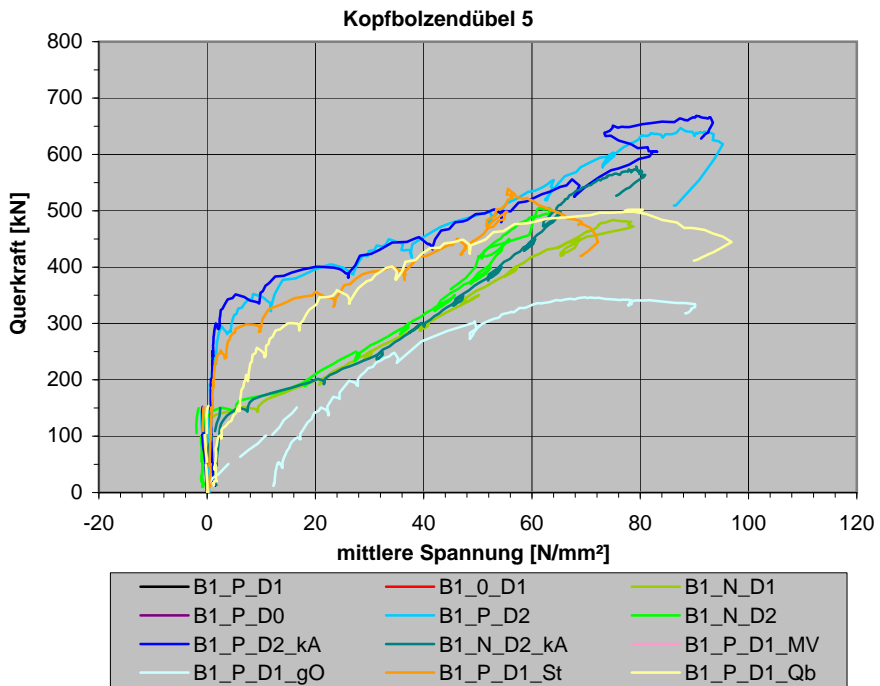
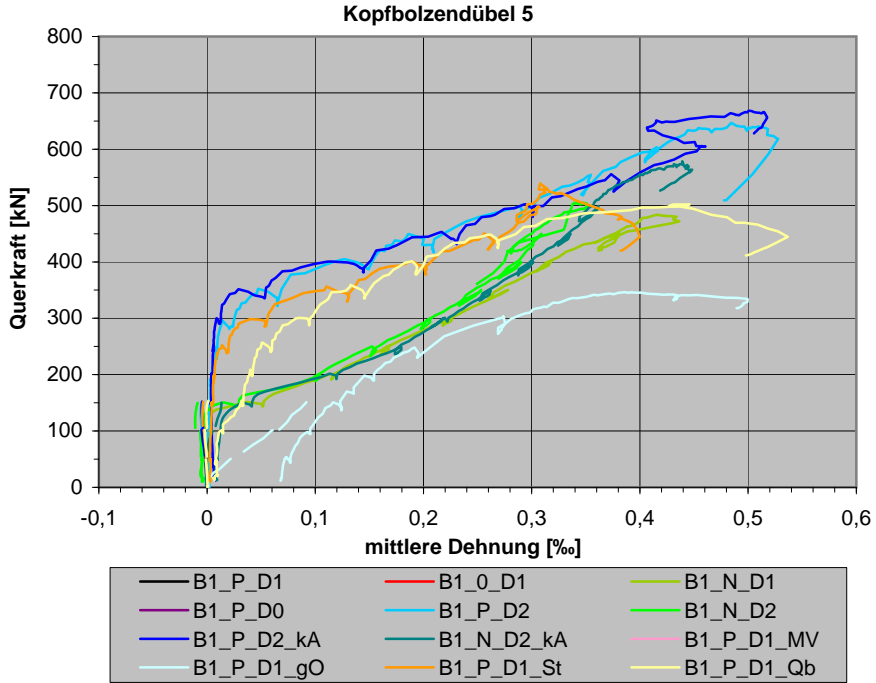


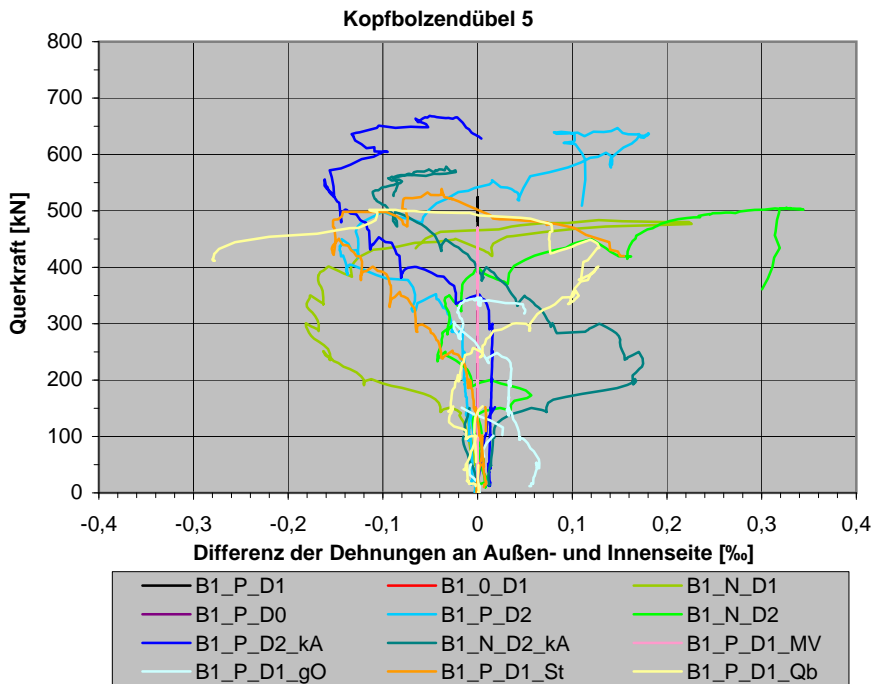
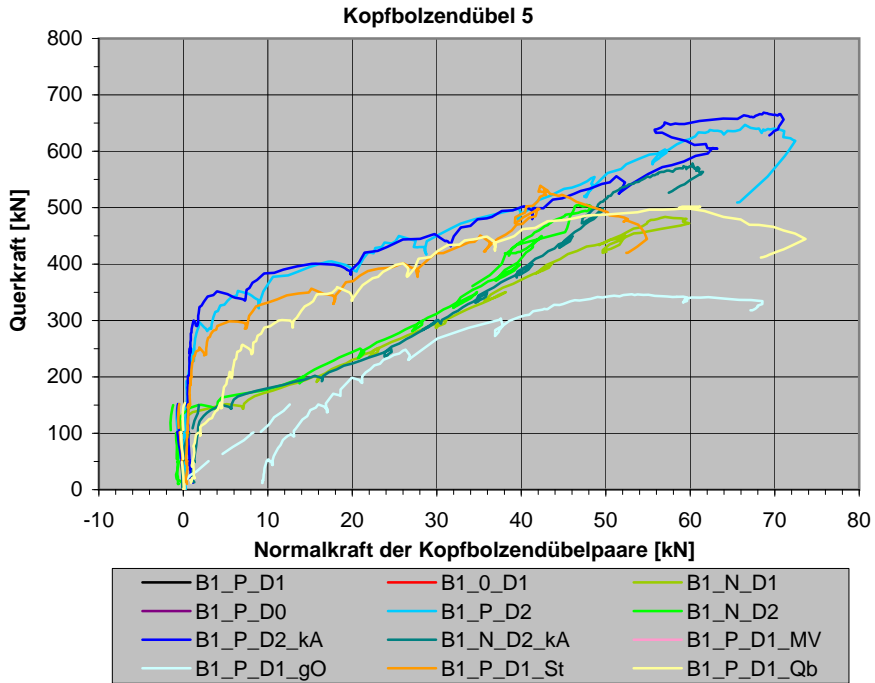




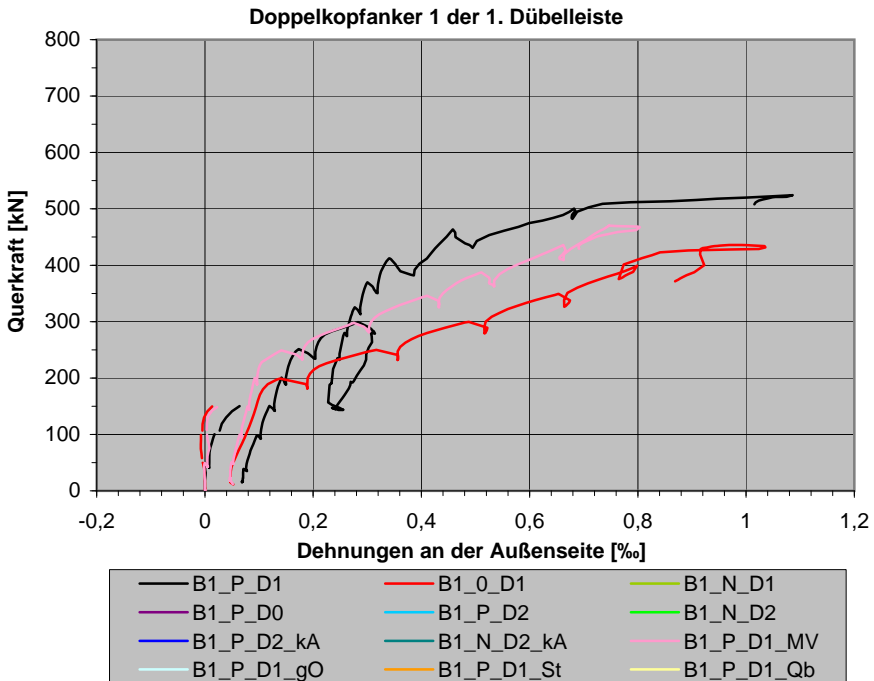
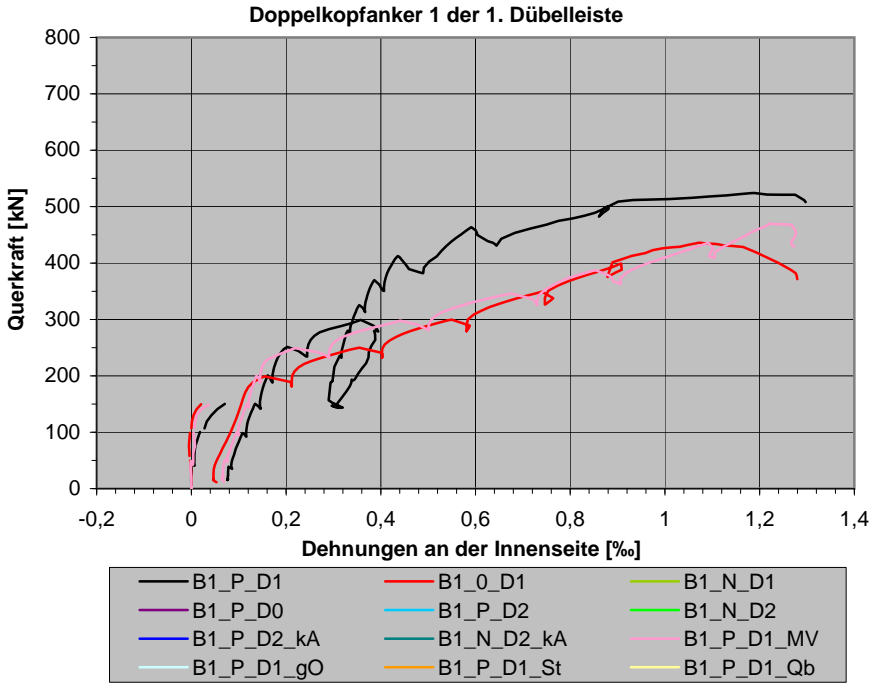


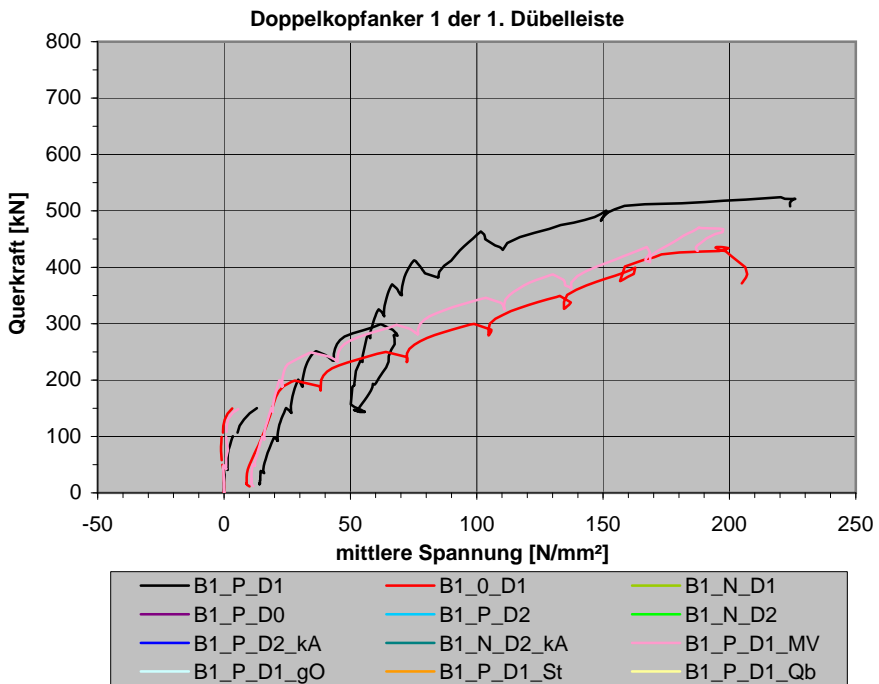
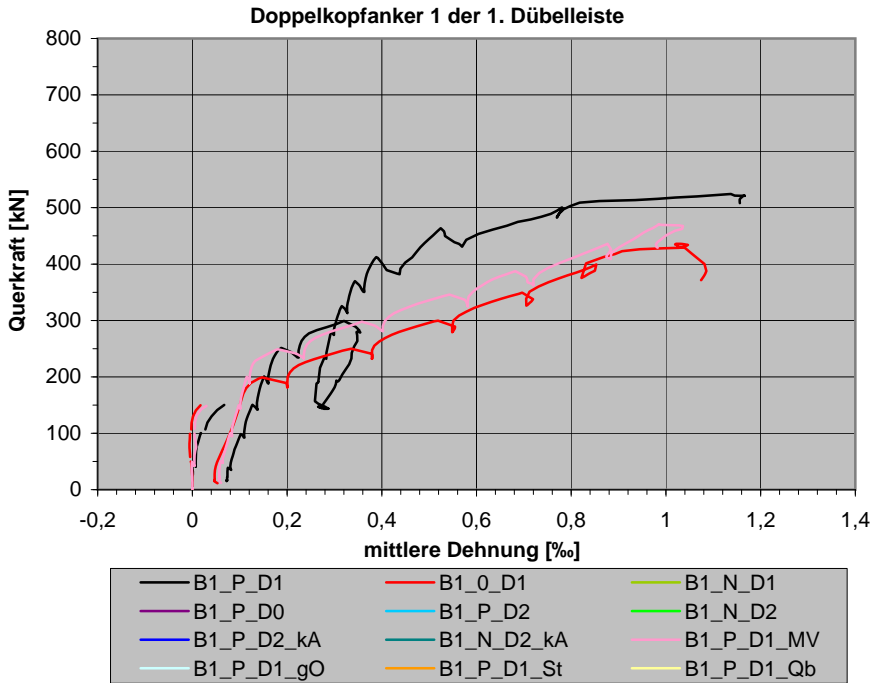


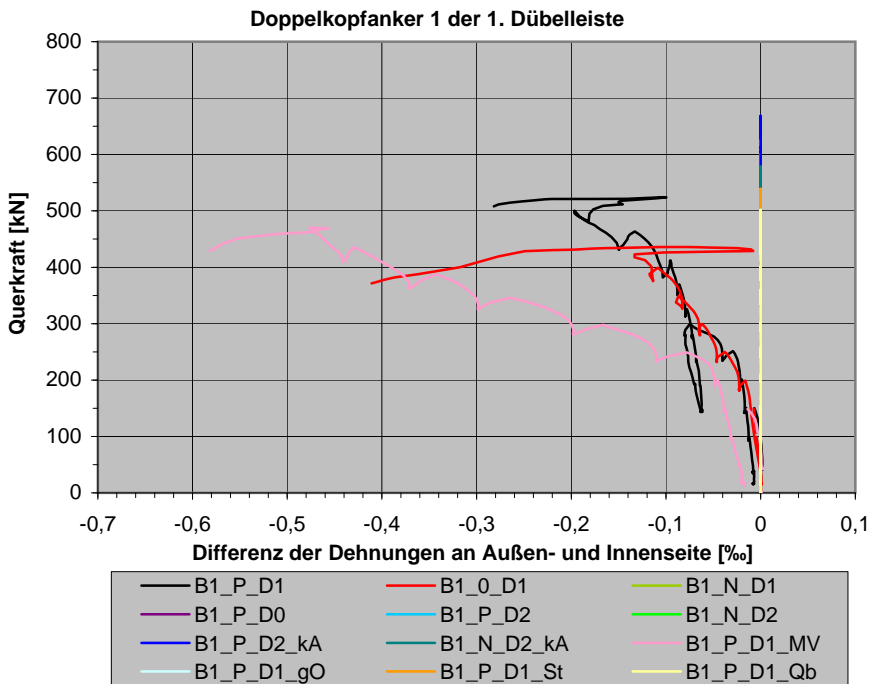
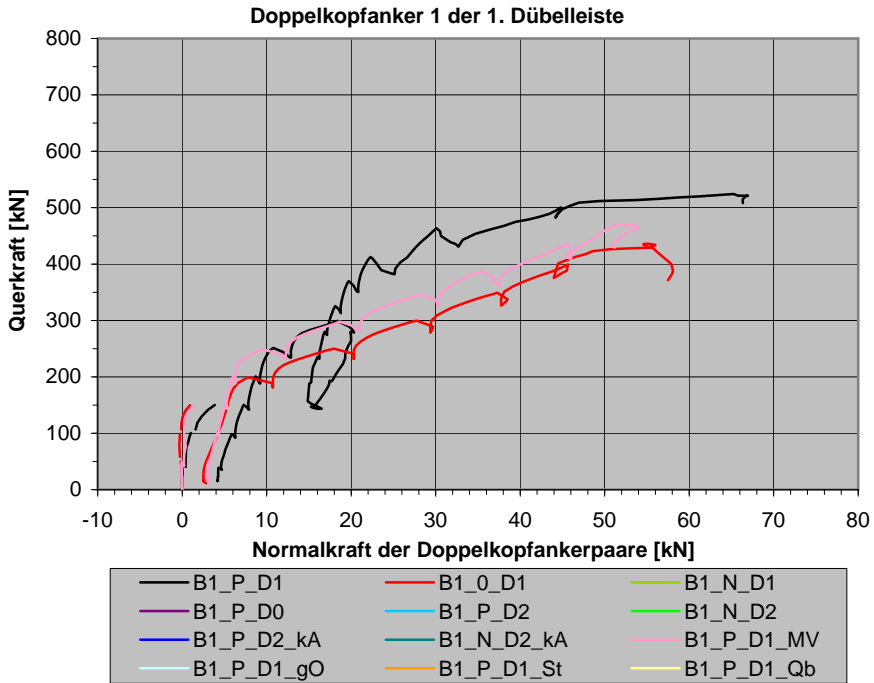


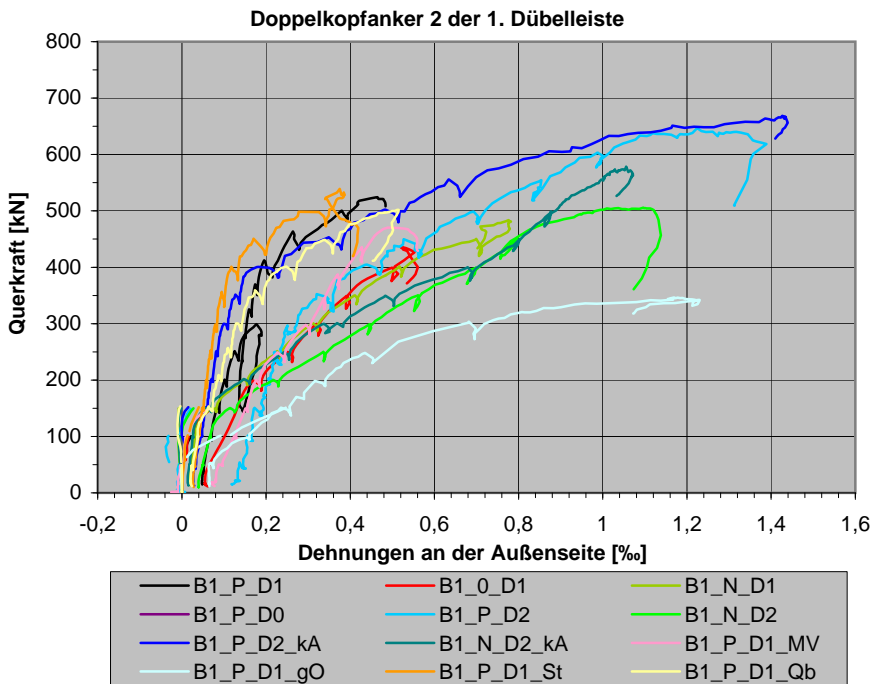
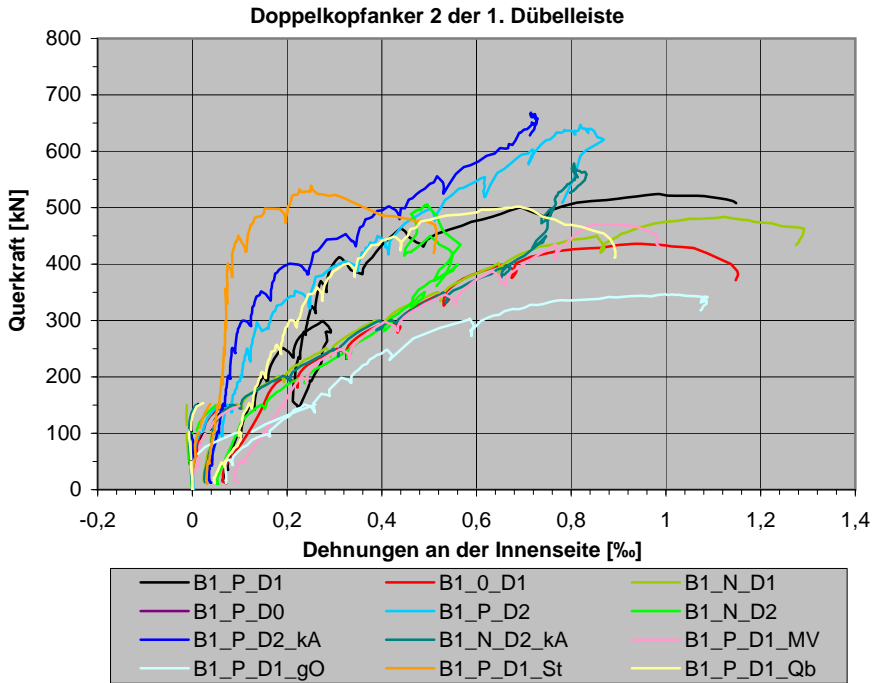


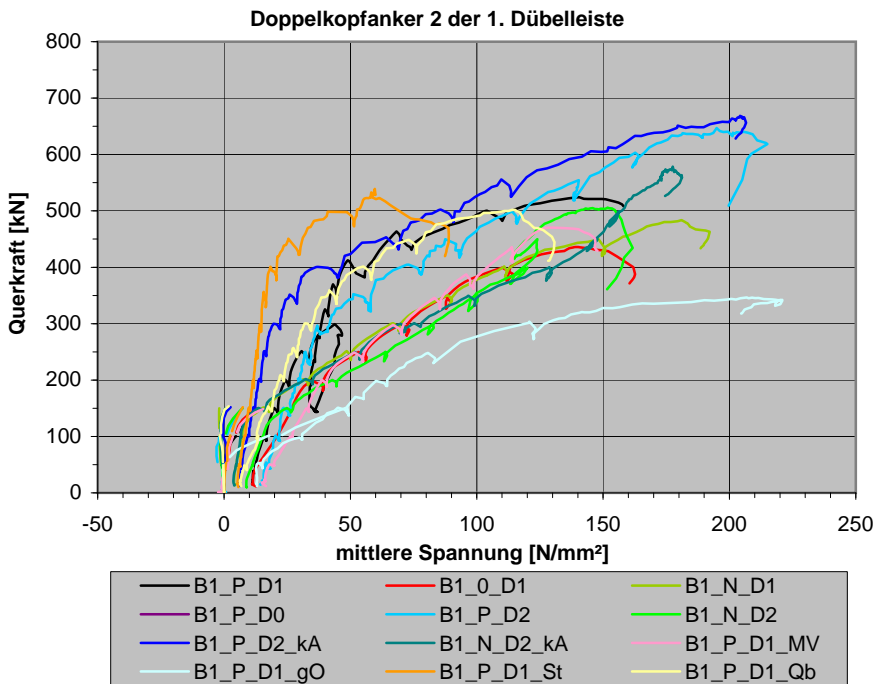
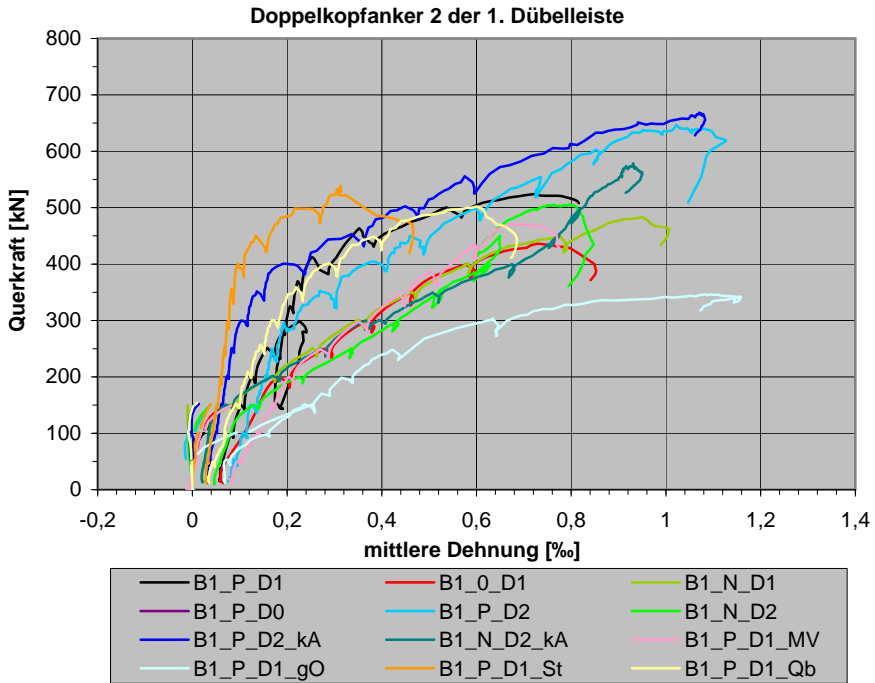
C.1.4. Doppelkopfkanker der ersten Dübelleiste

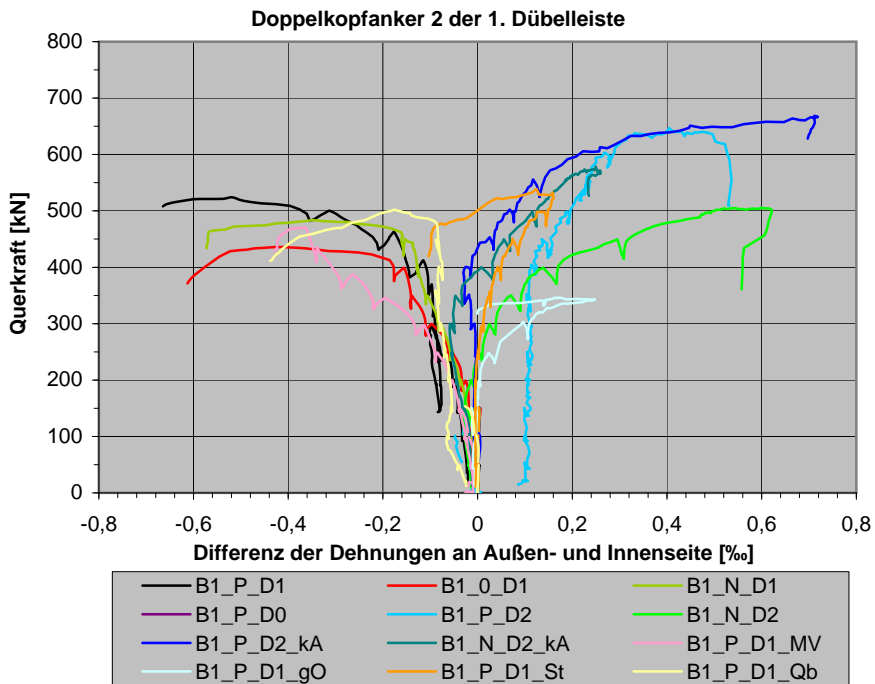
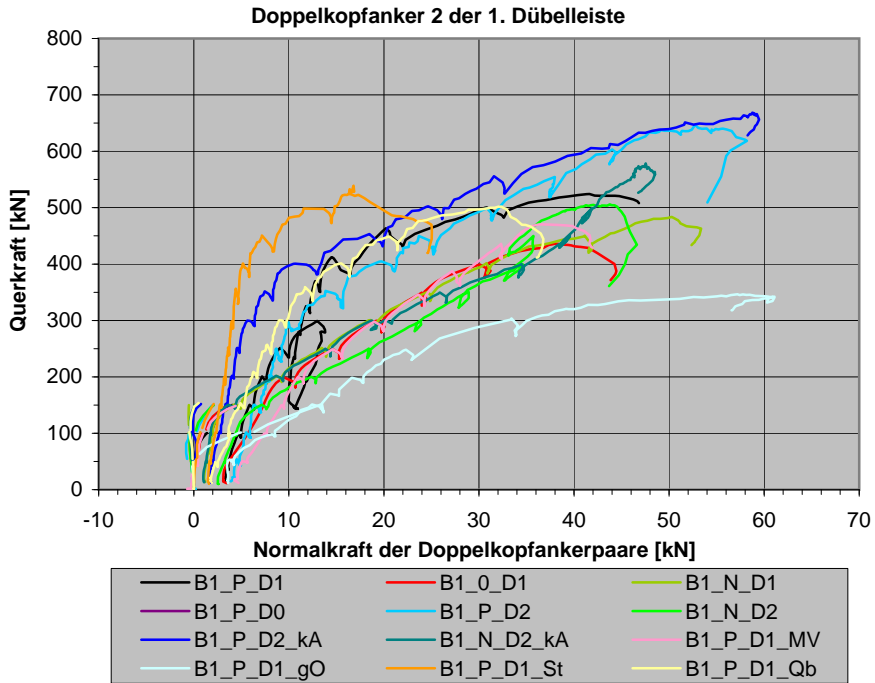


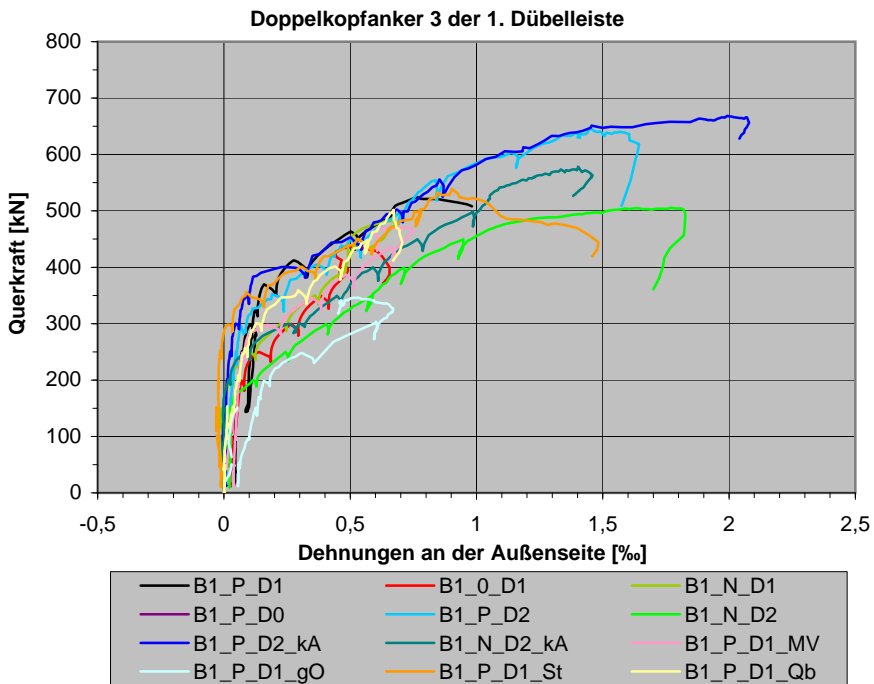
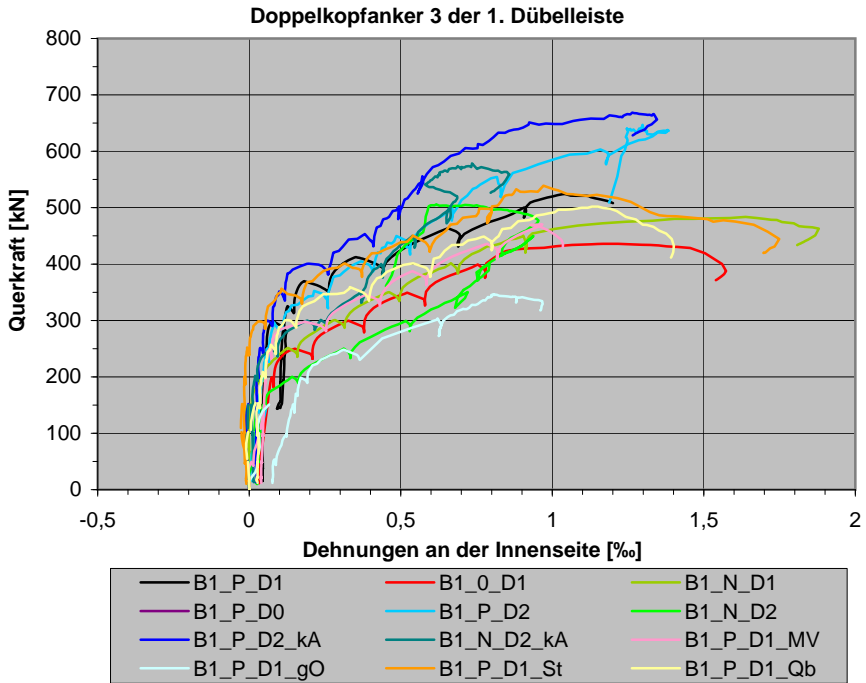


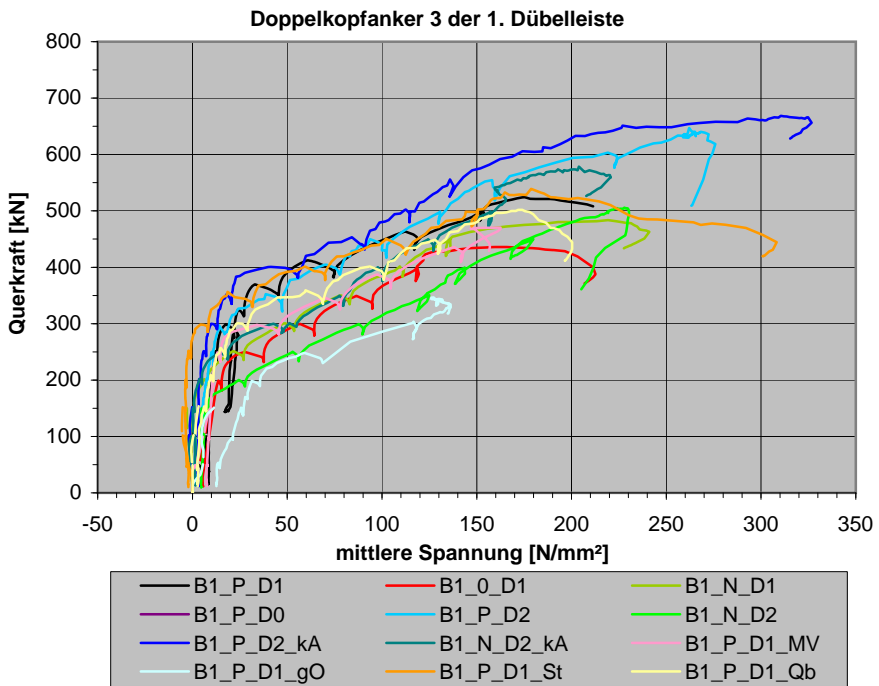
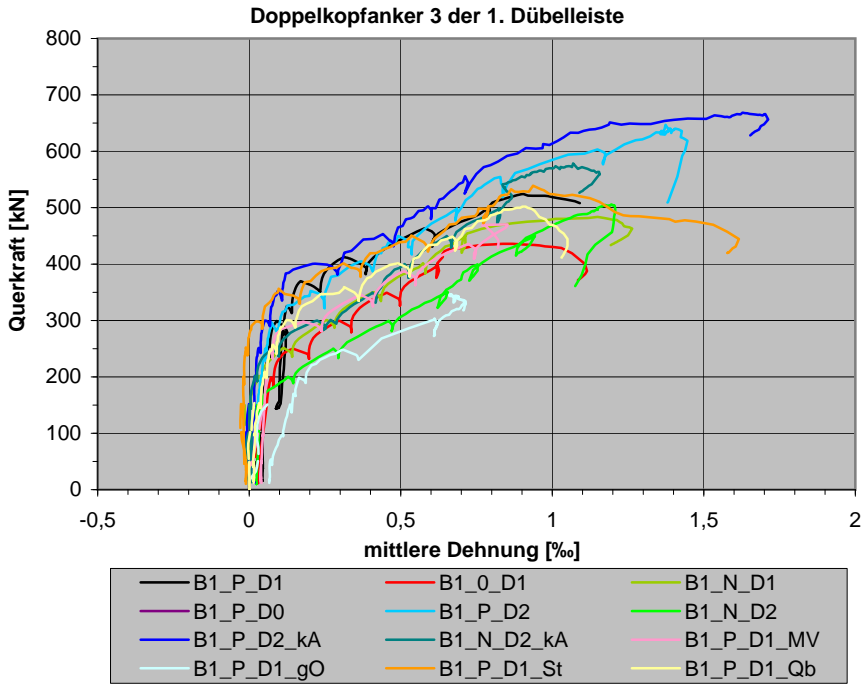


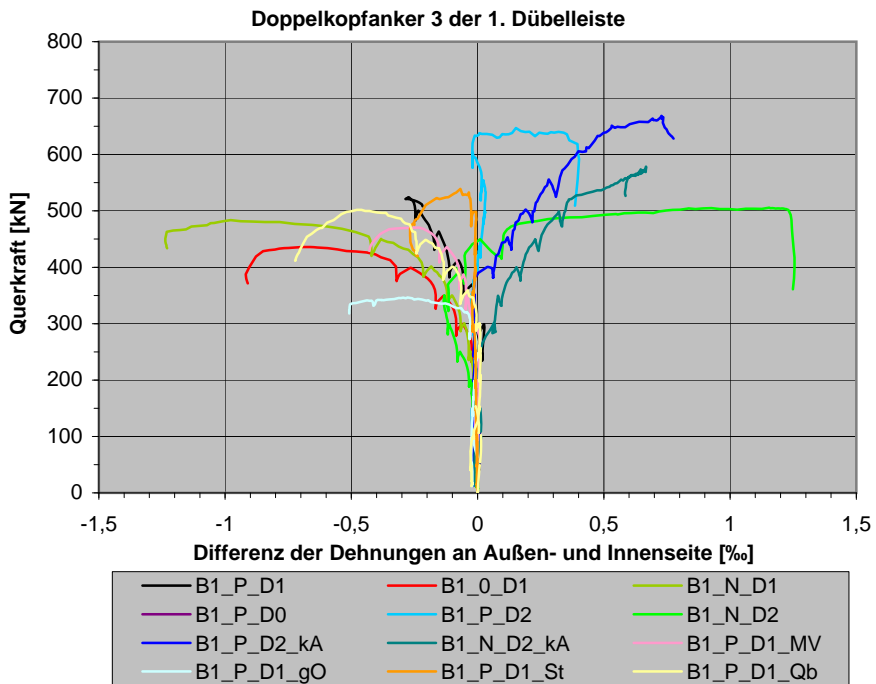
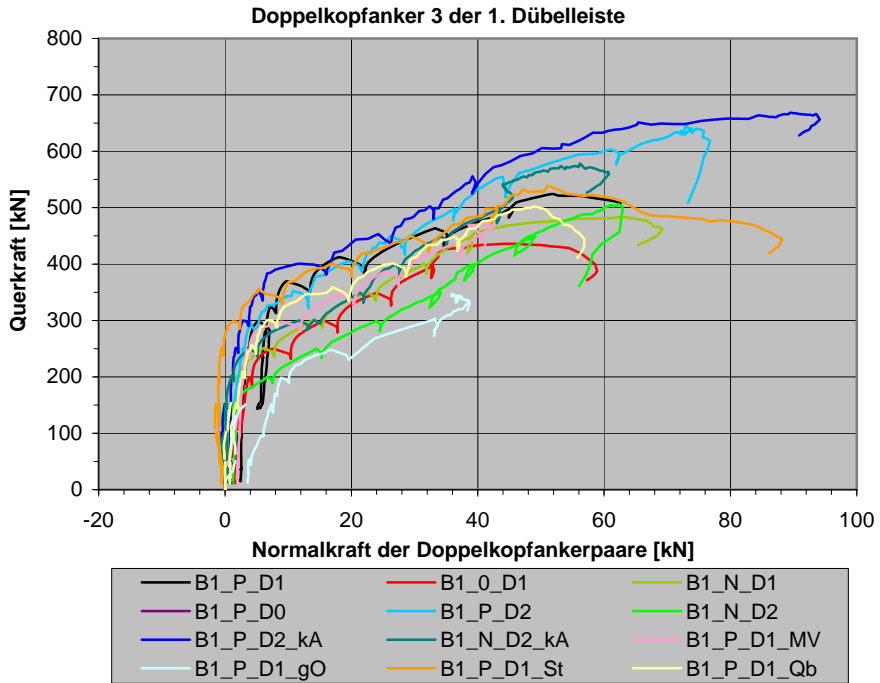


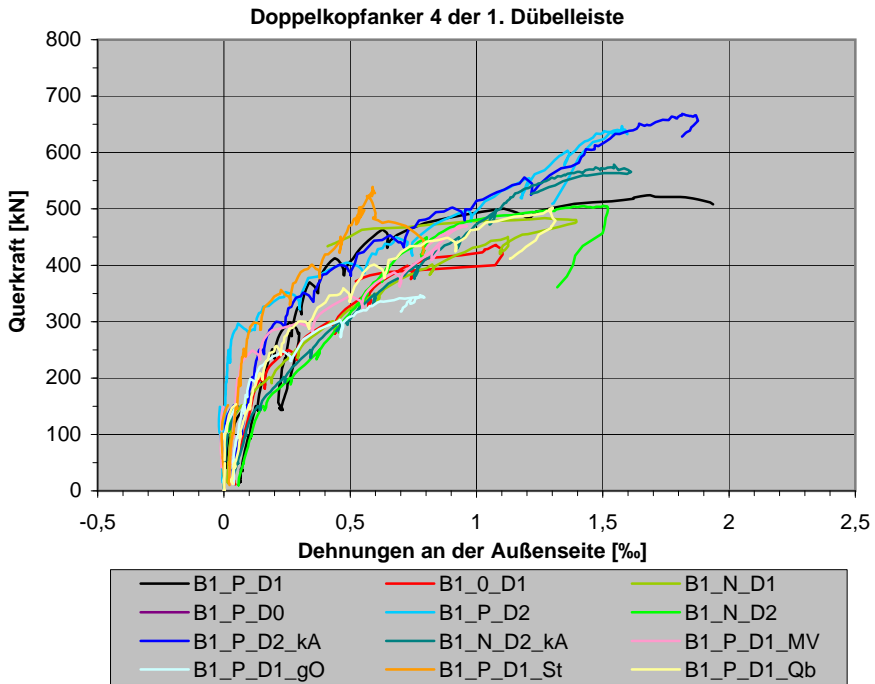
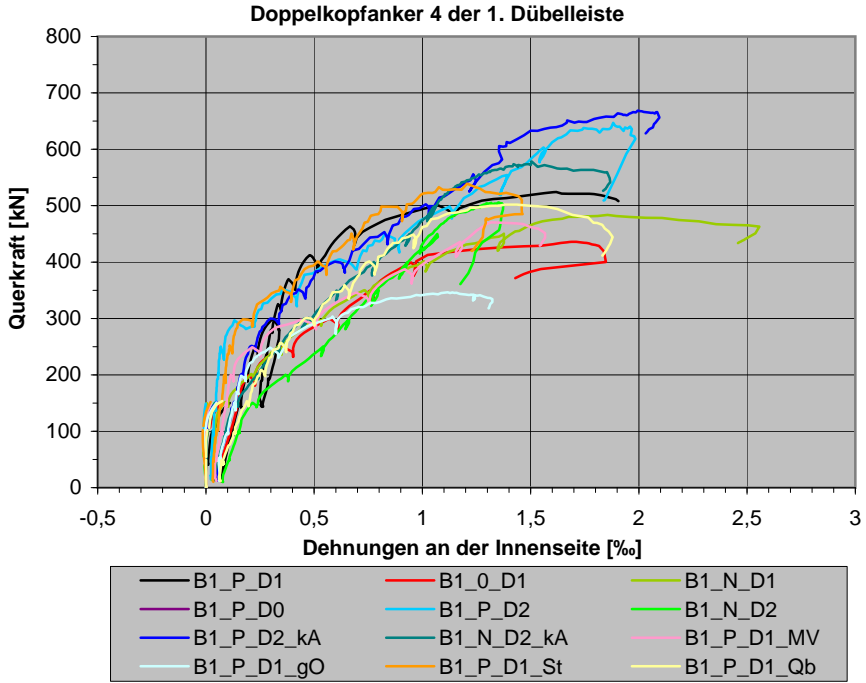


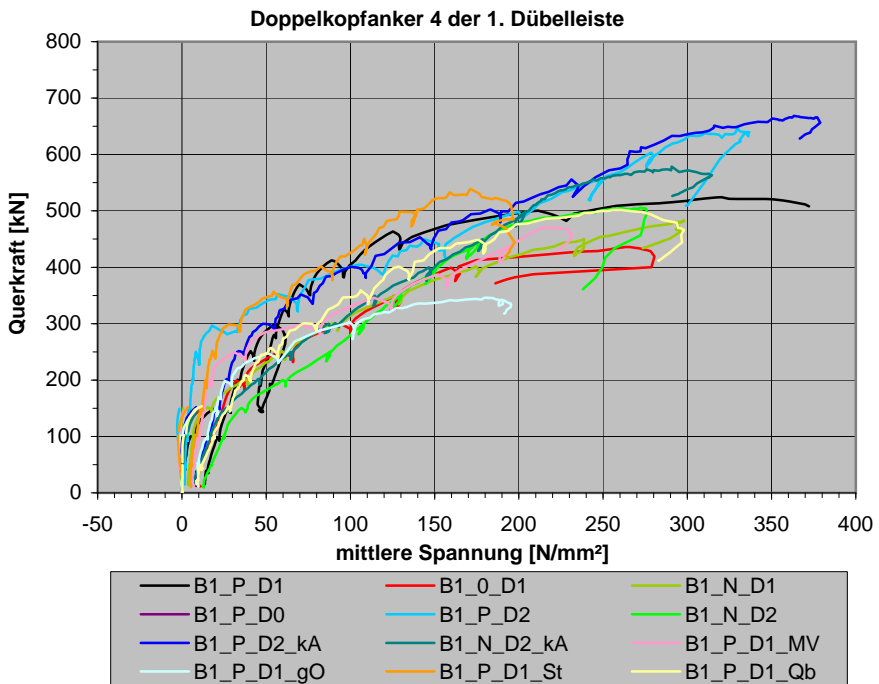
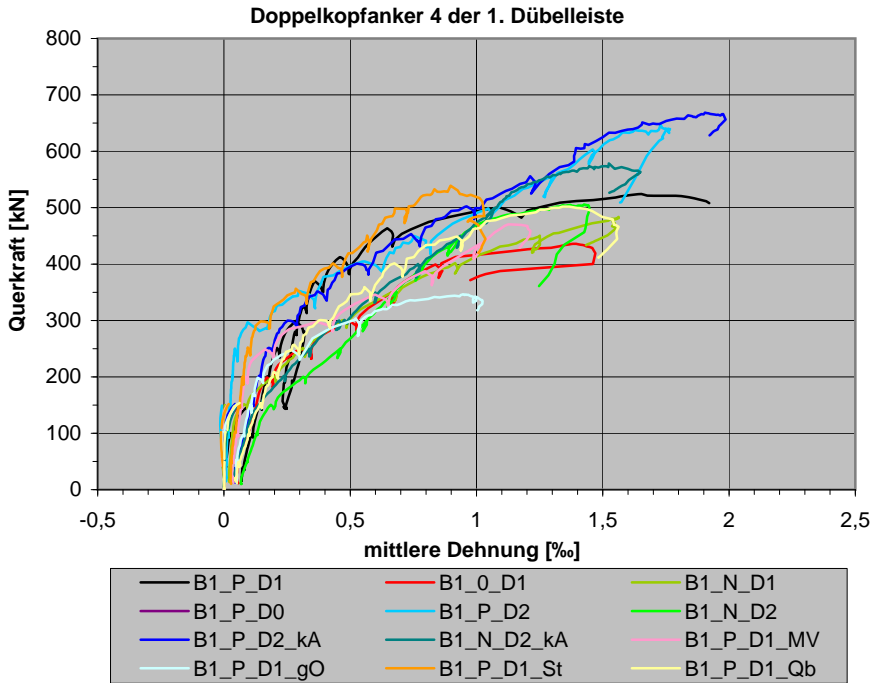


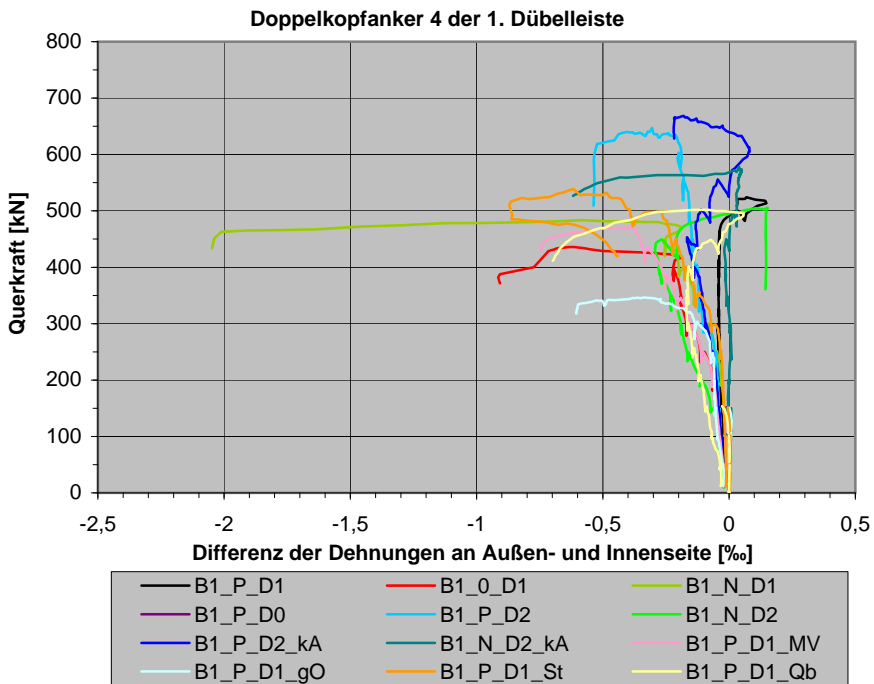
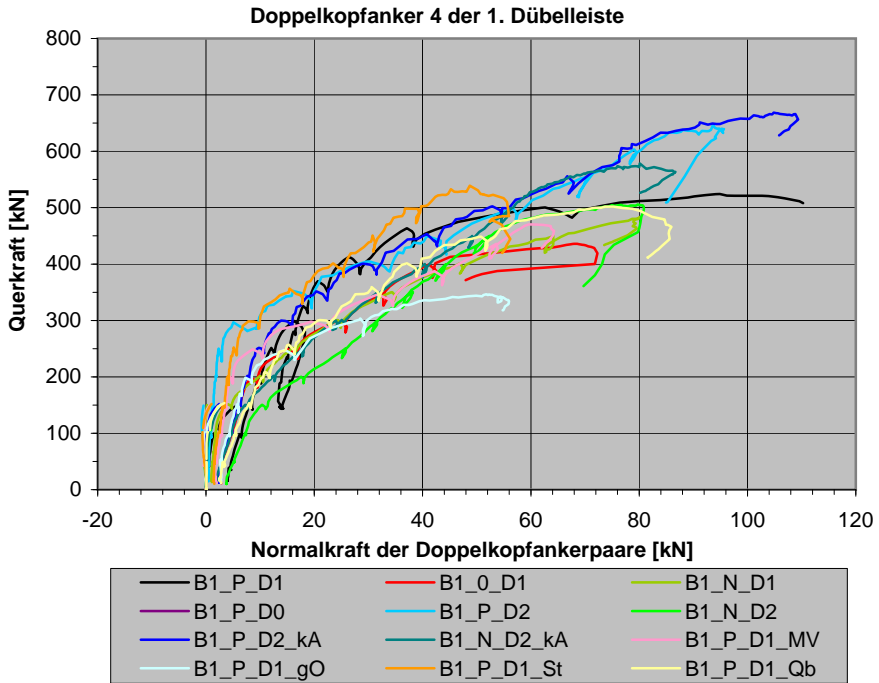


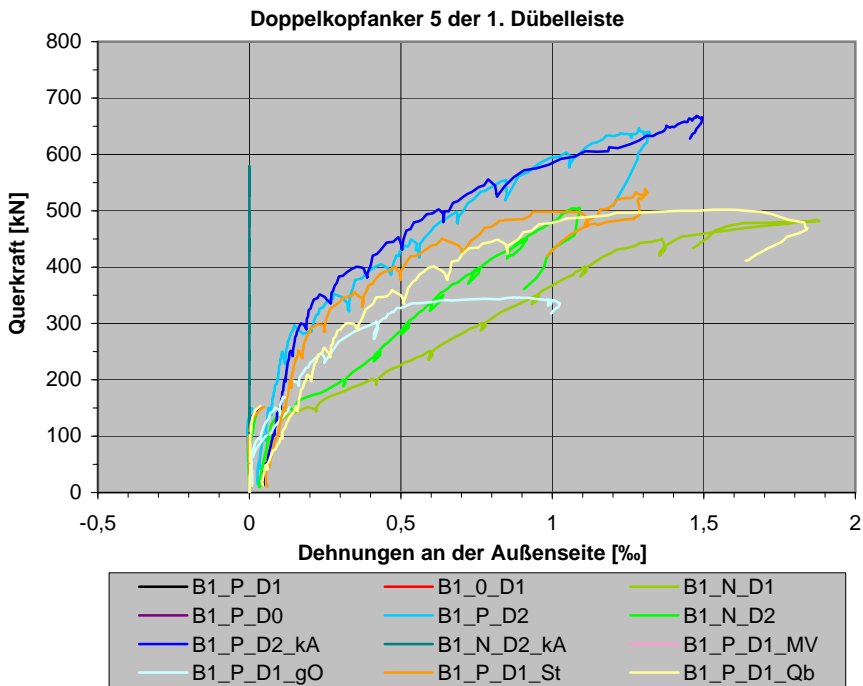
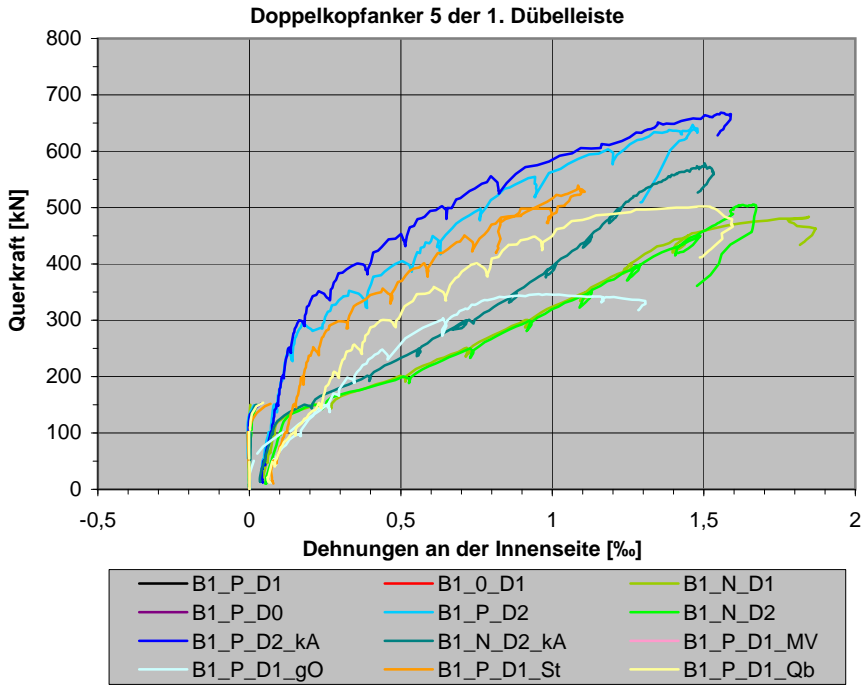


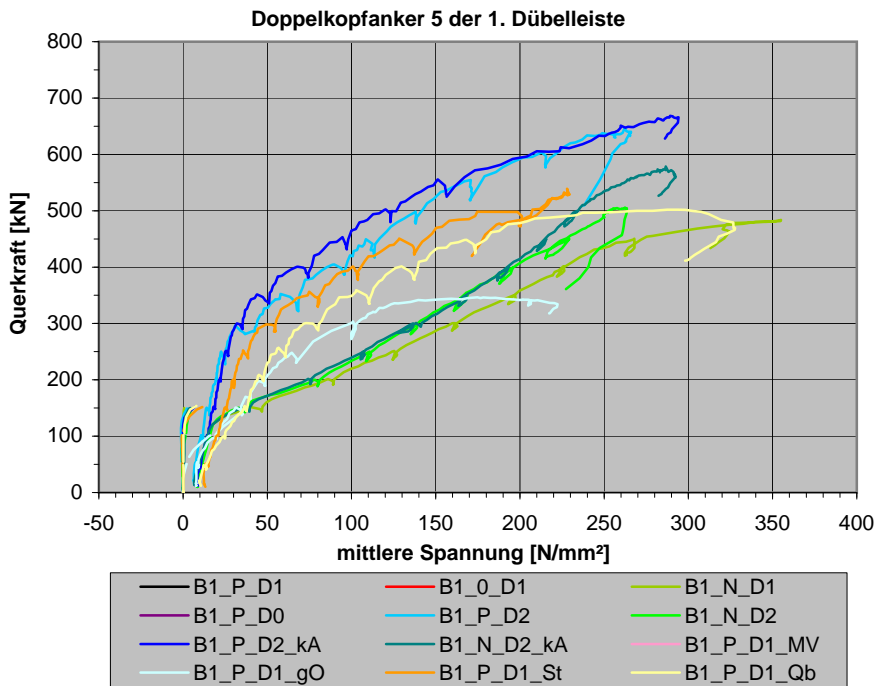
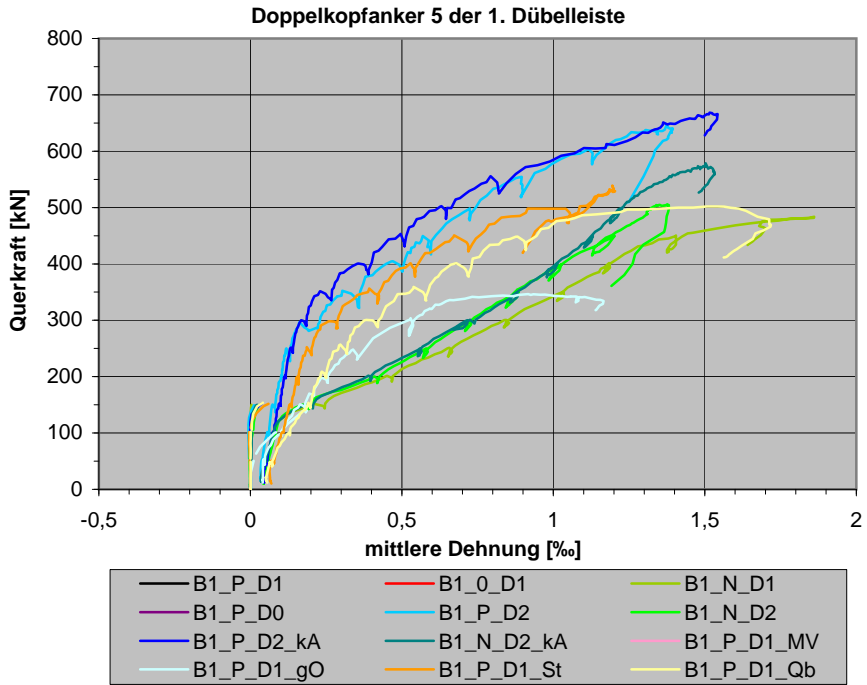


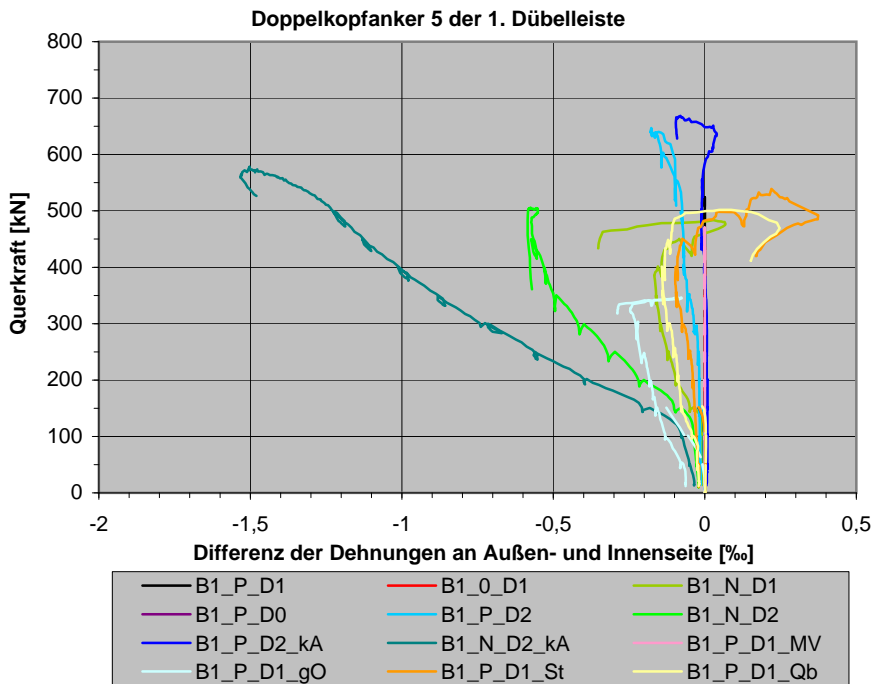
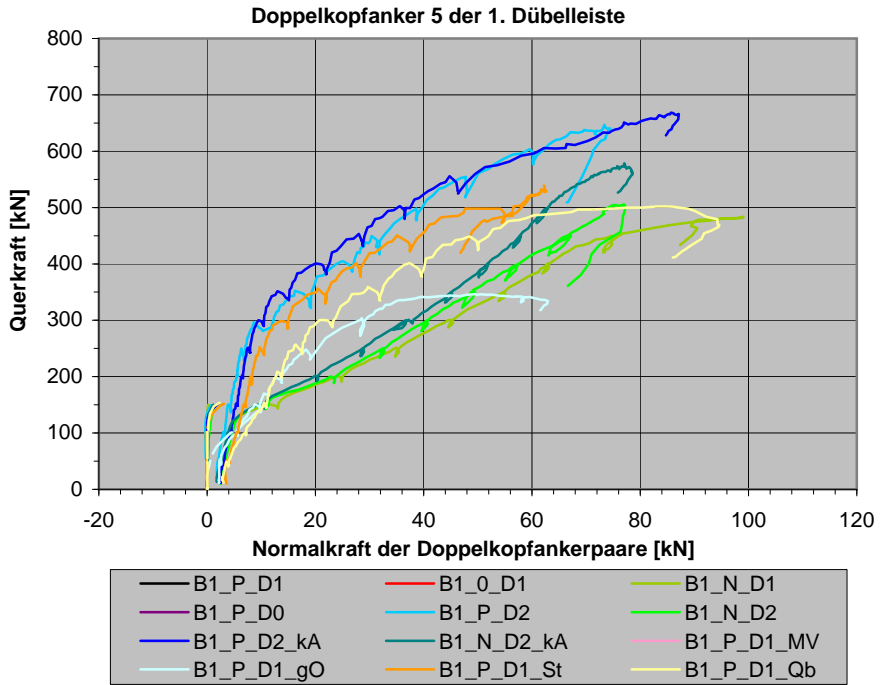




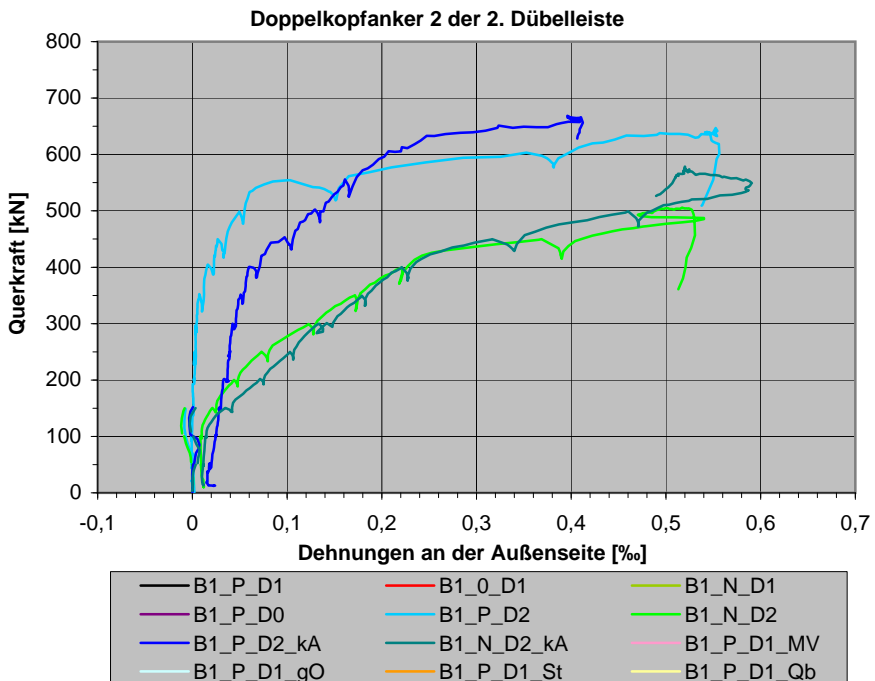
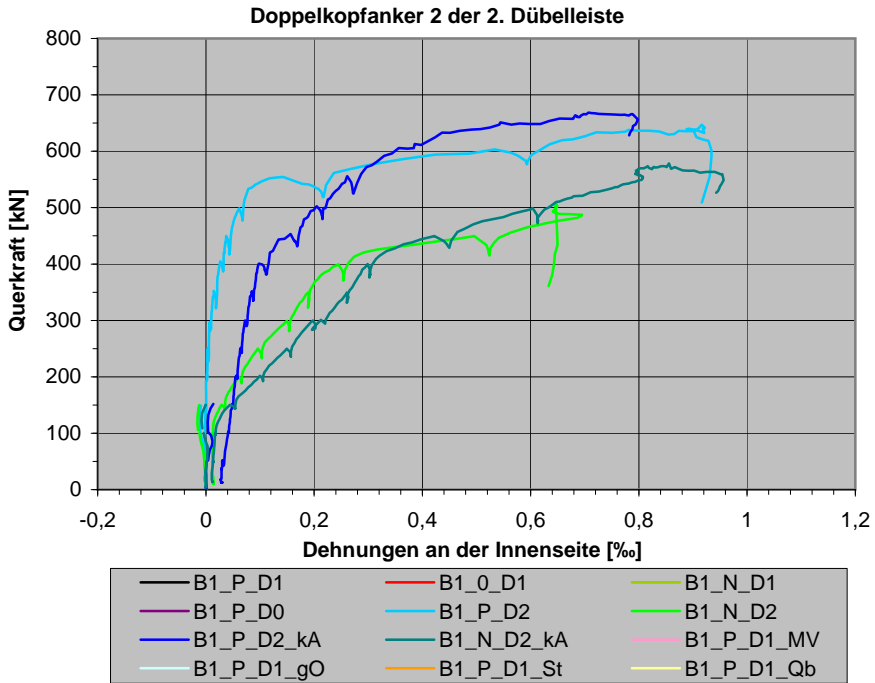


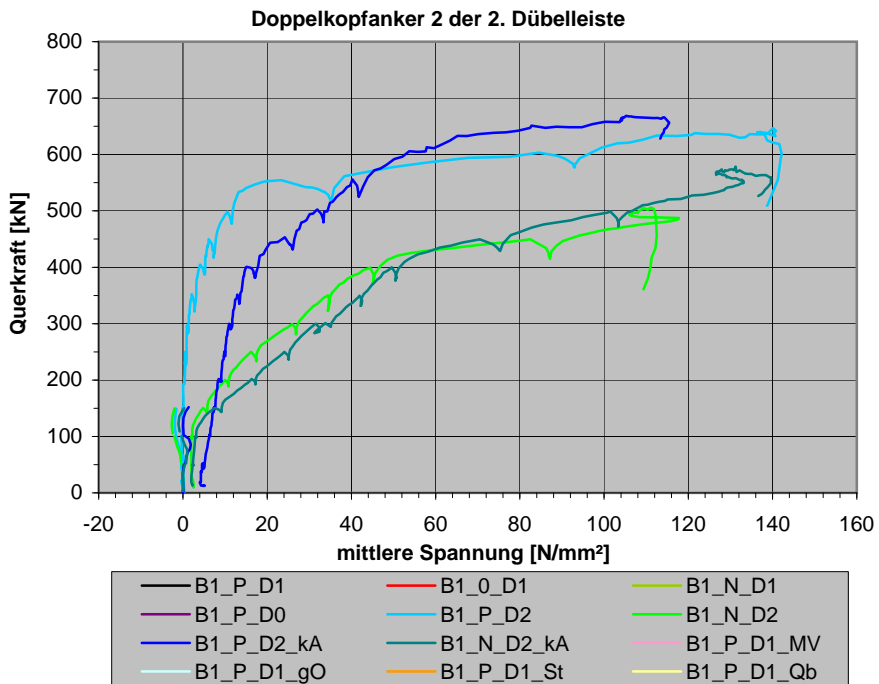
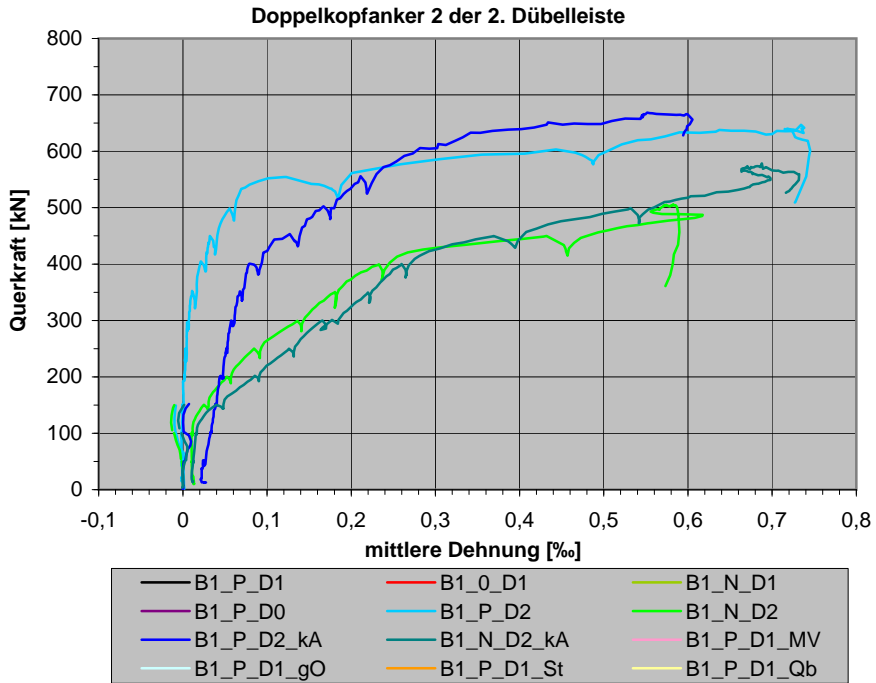


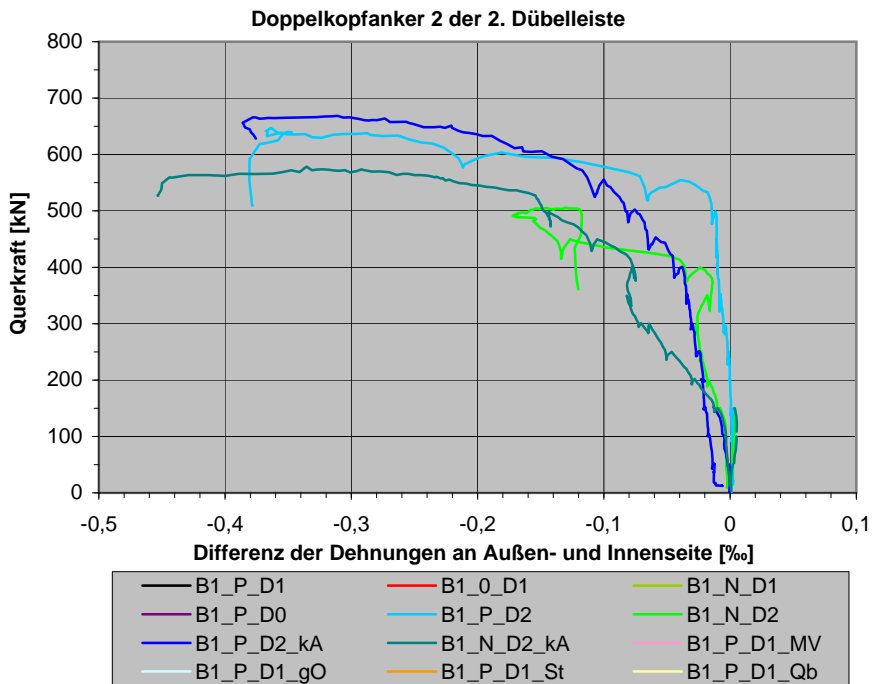
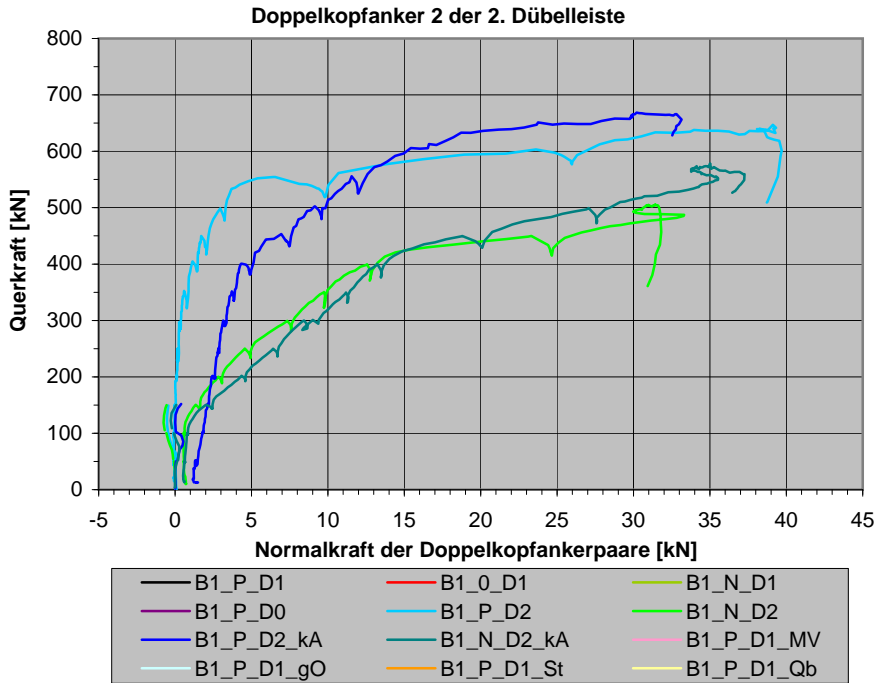


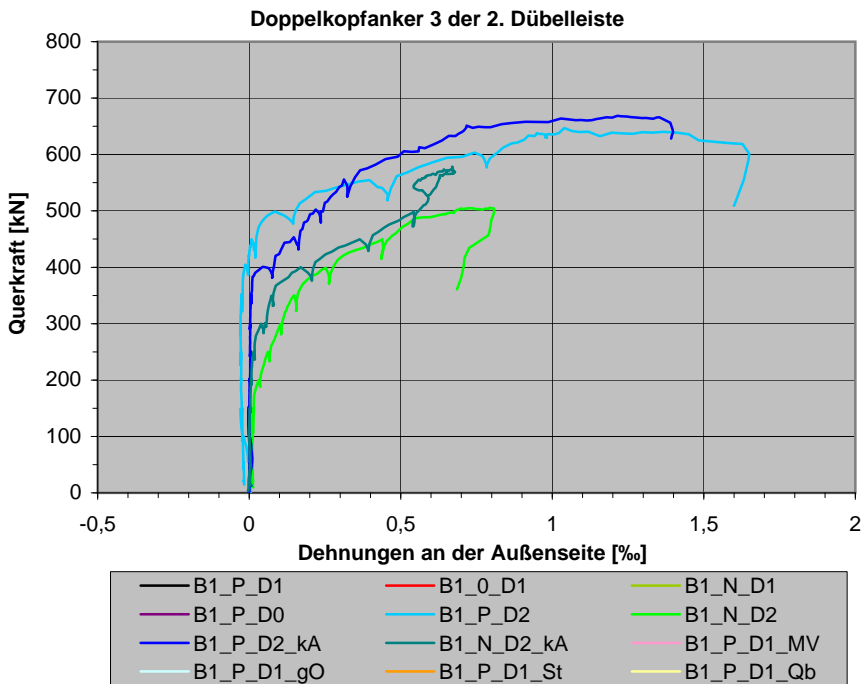
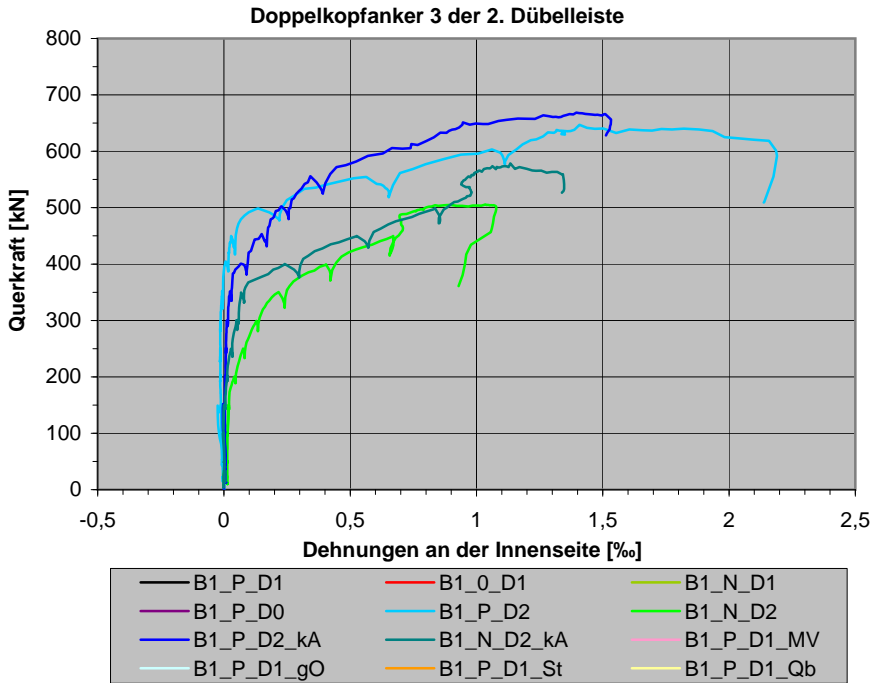


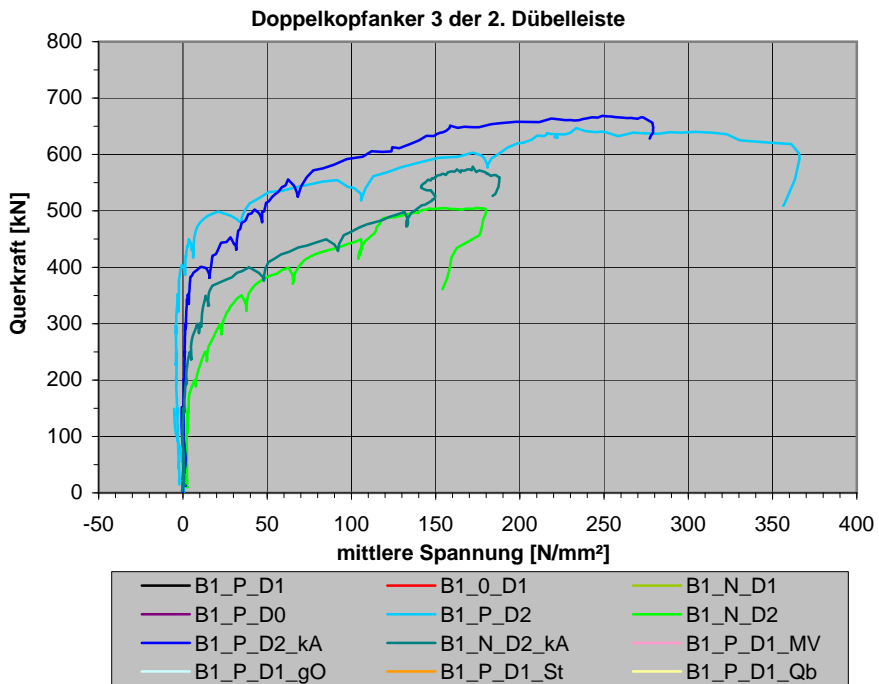
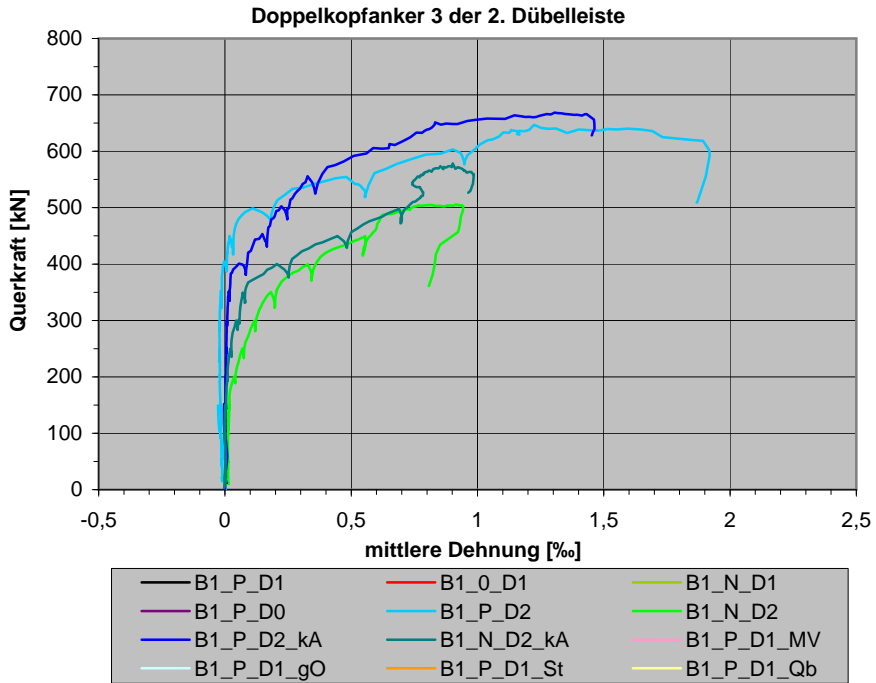
C.1.5. Doppelkopfkanker der zweiten Dübelleiste

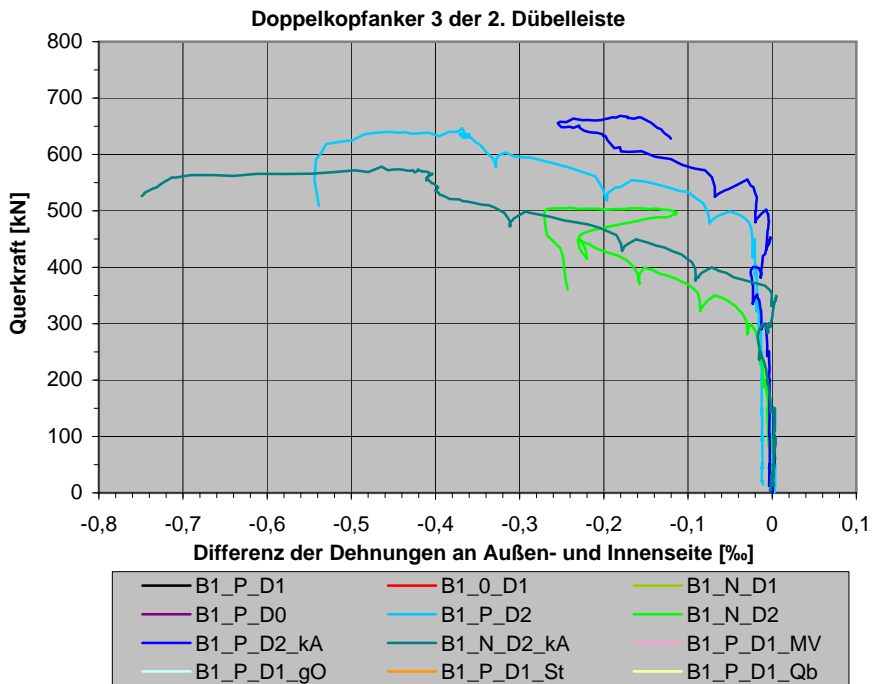
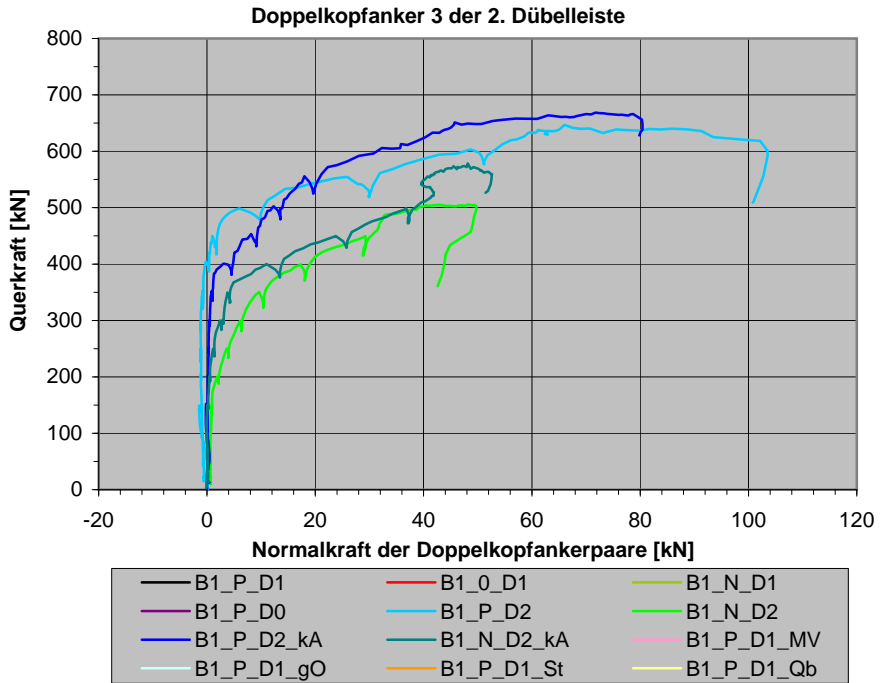


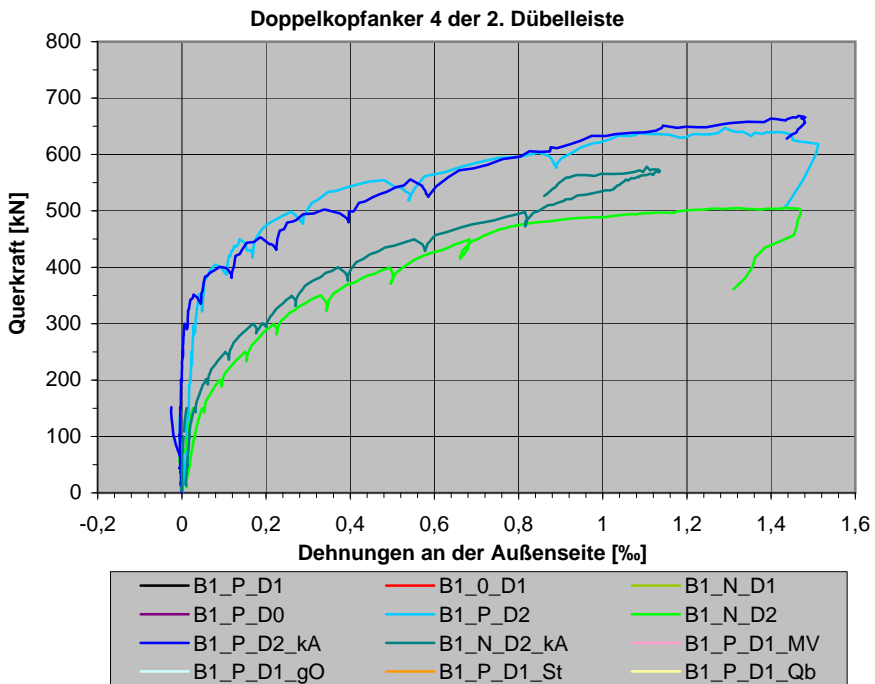
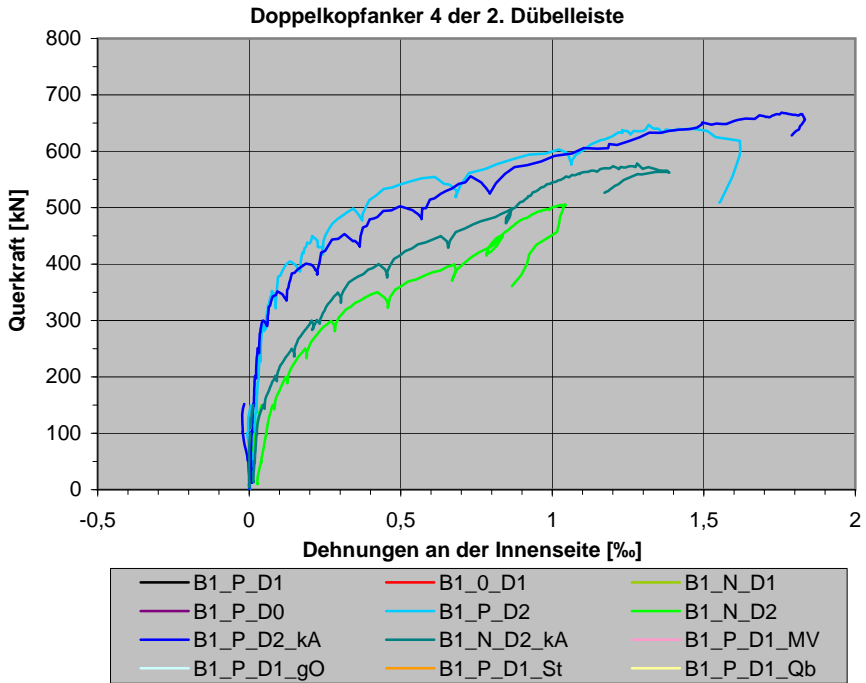


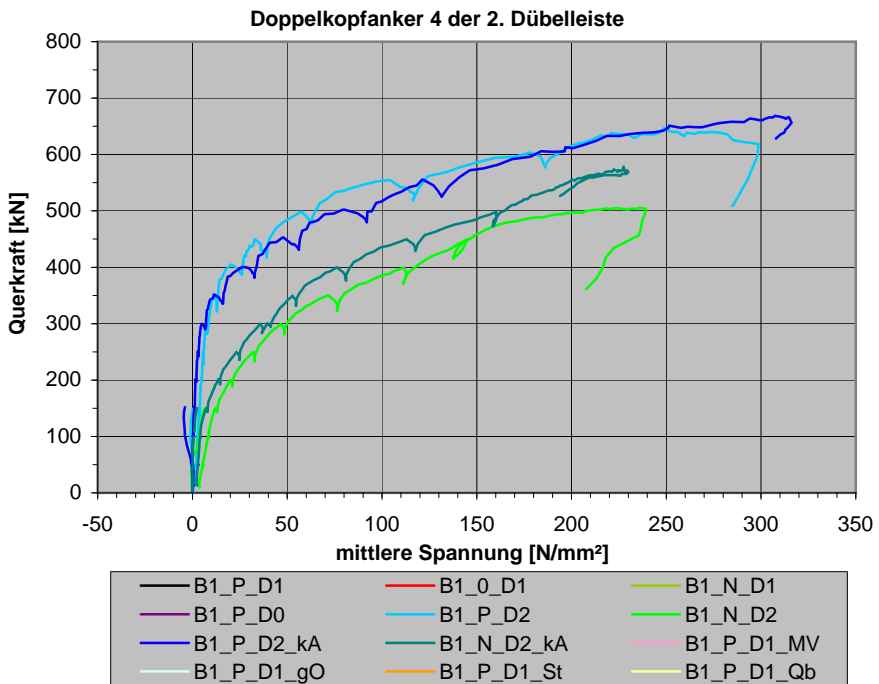
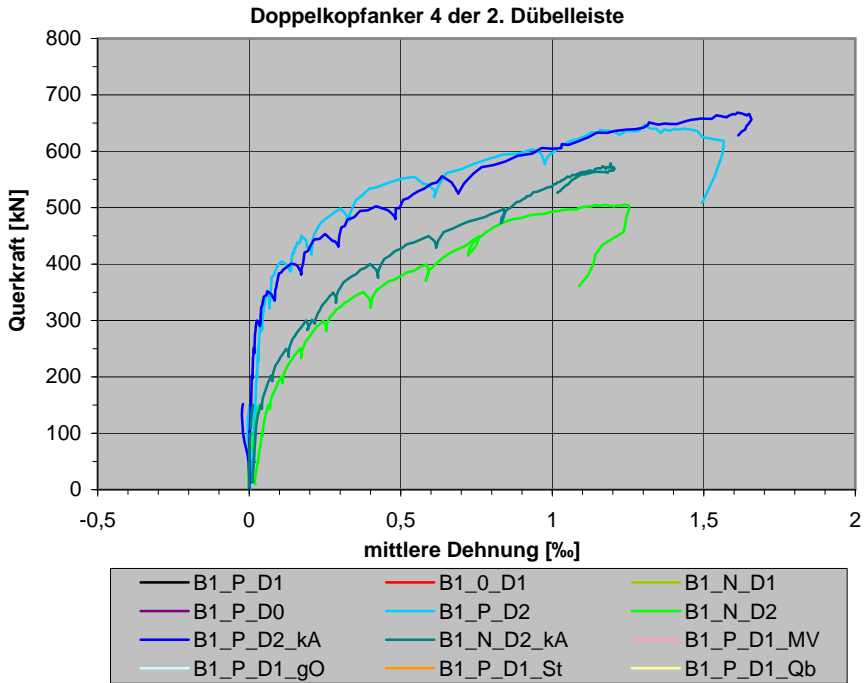


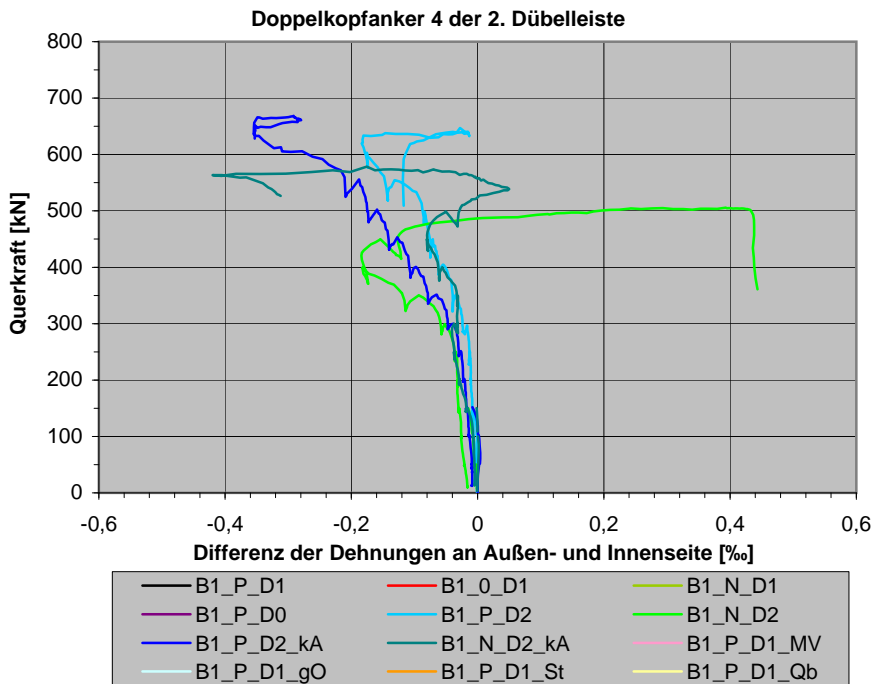
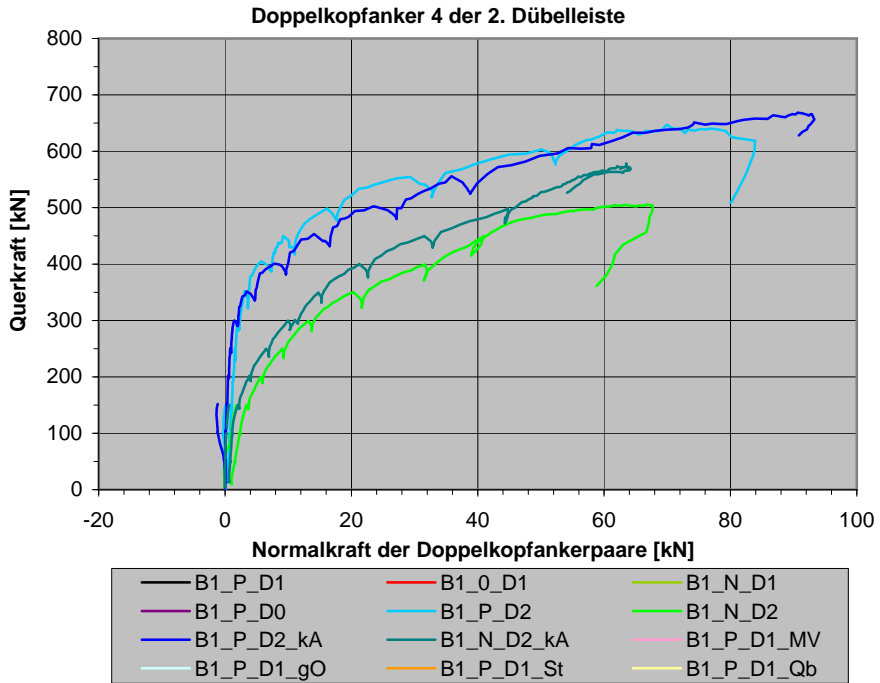


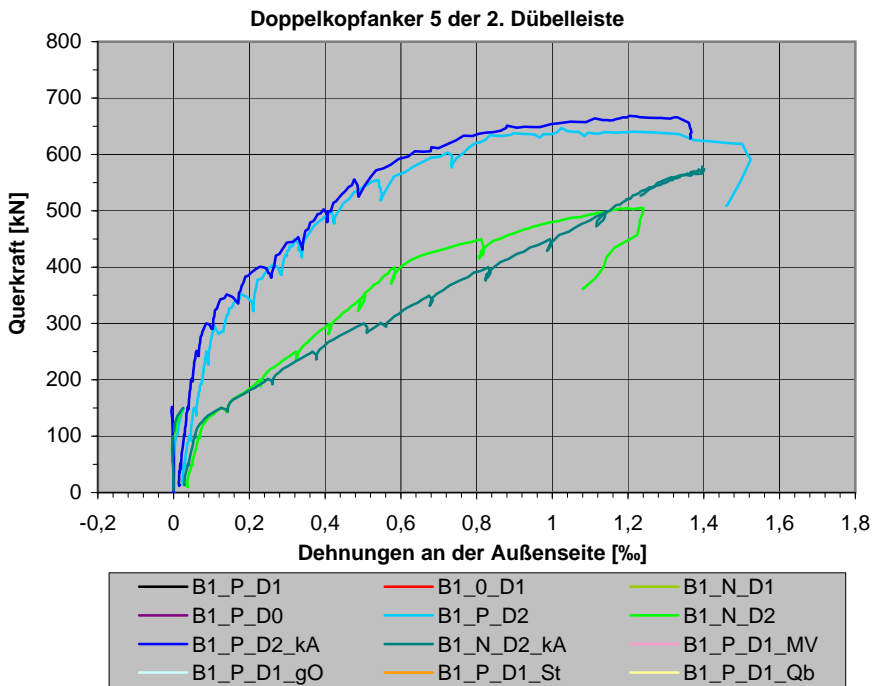
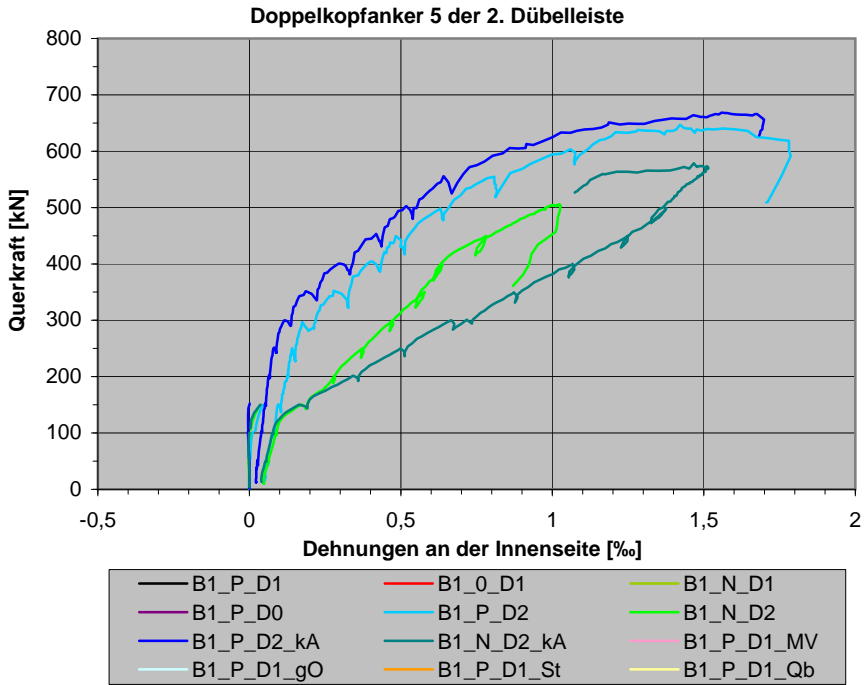


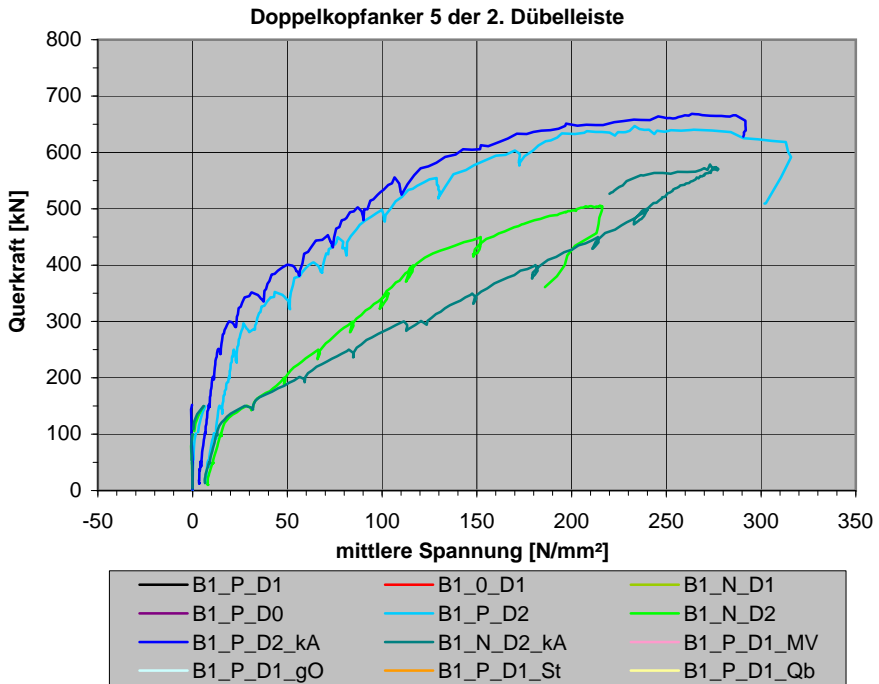
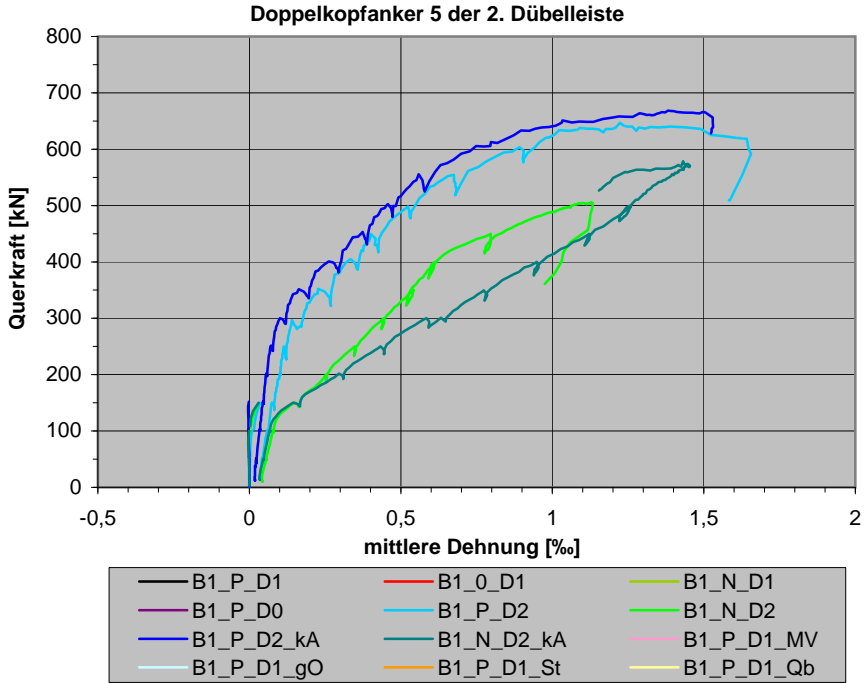


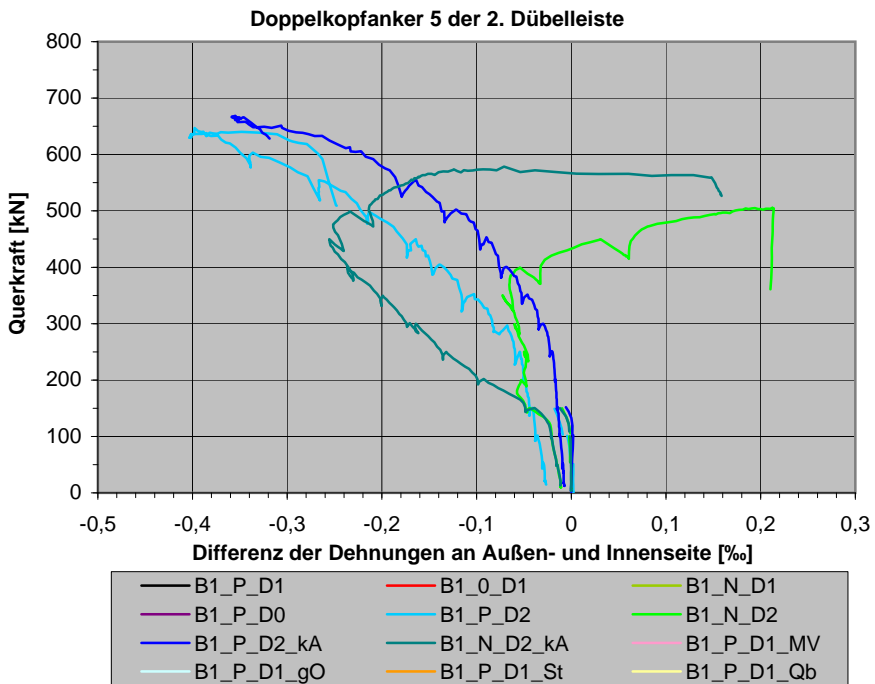
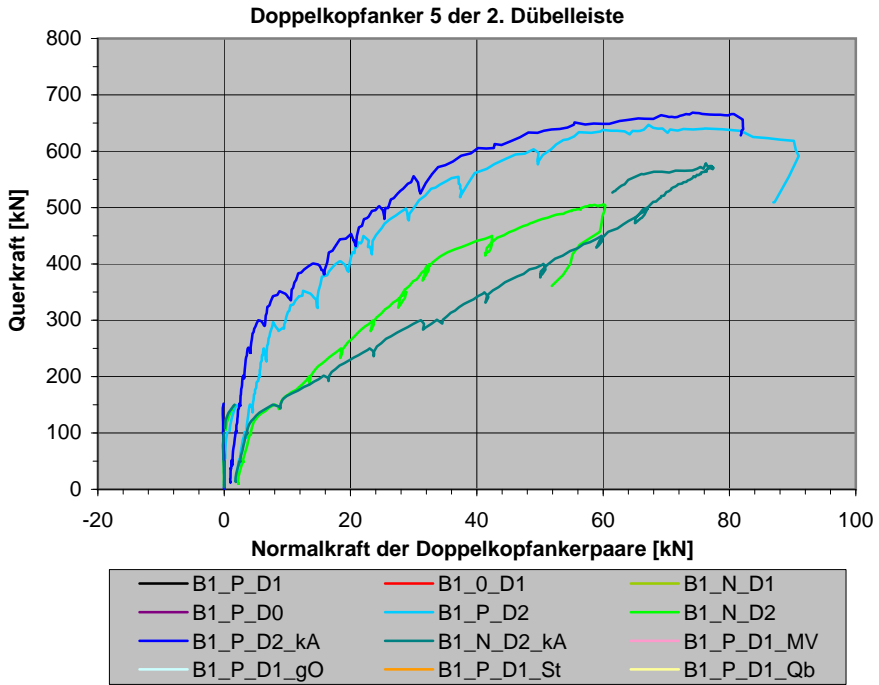




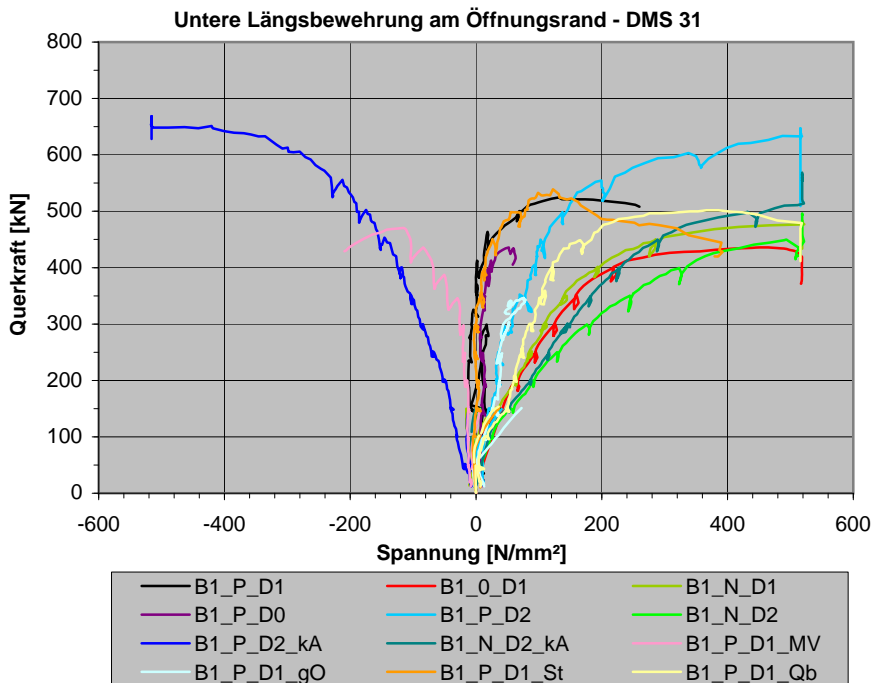
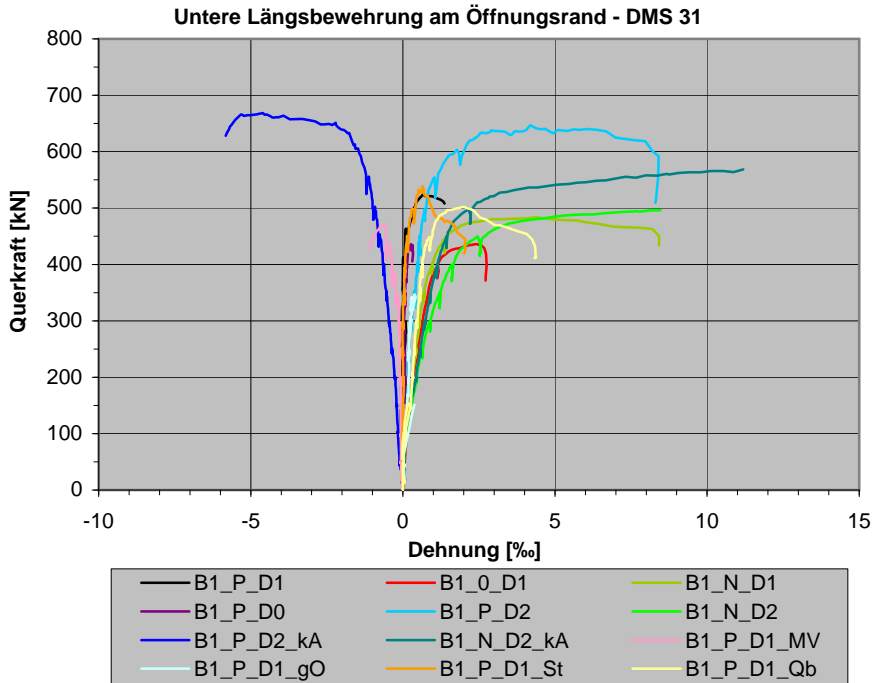


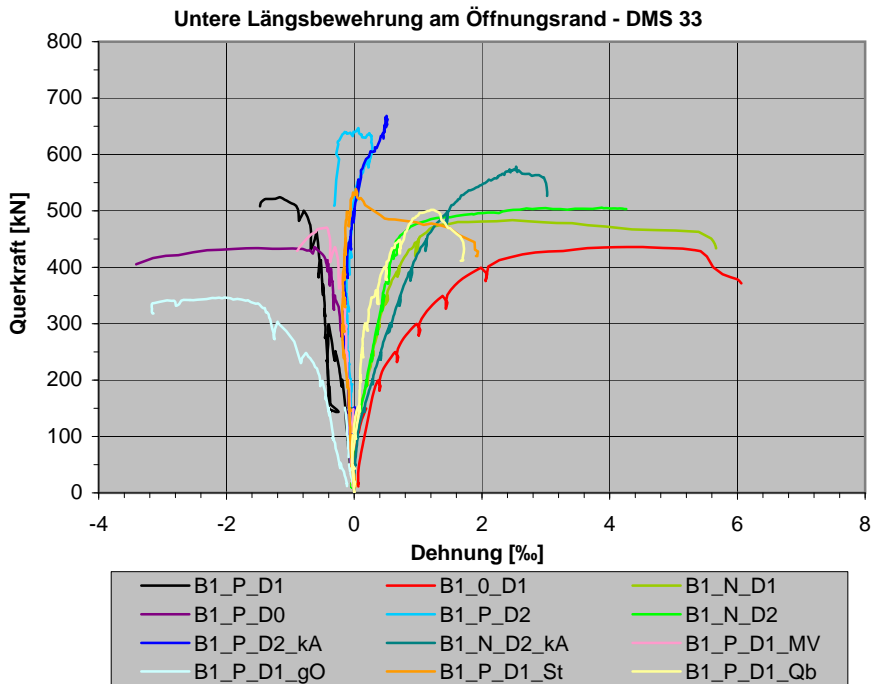
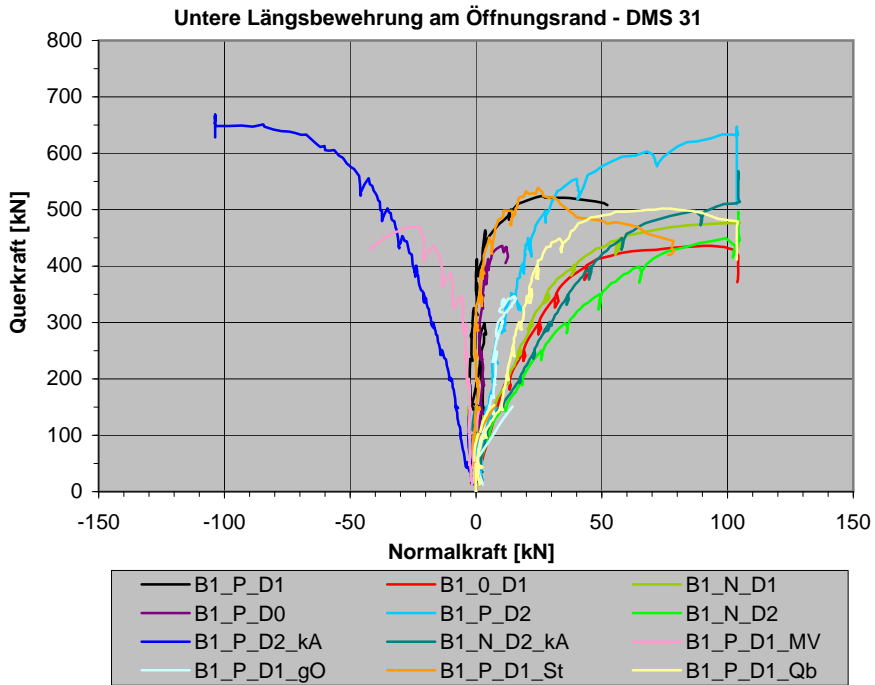


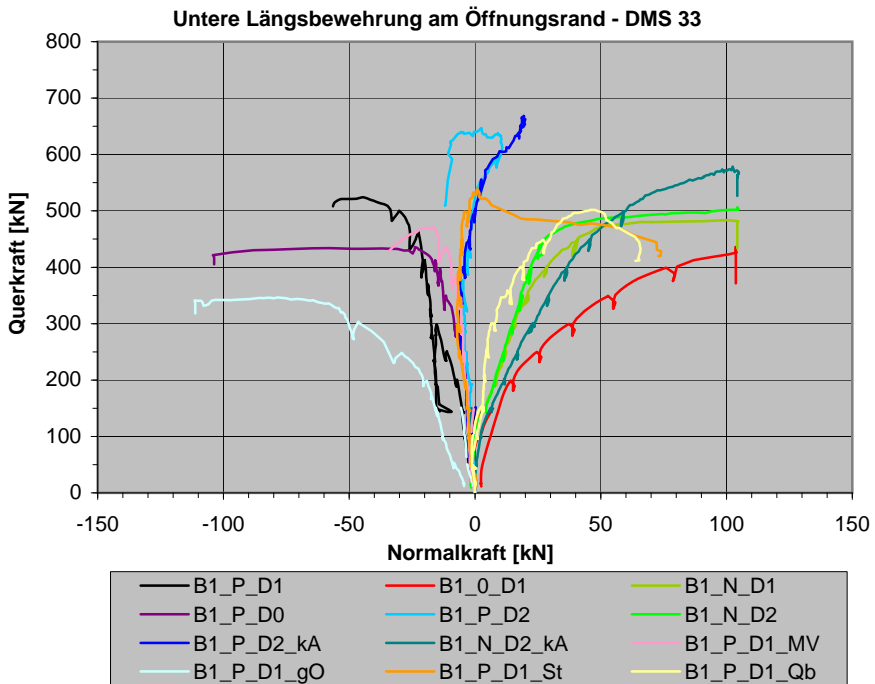
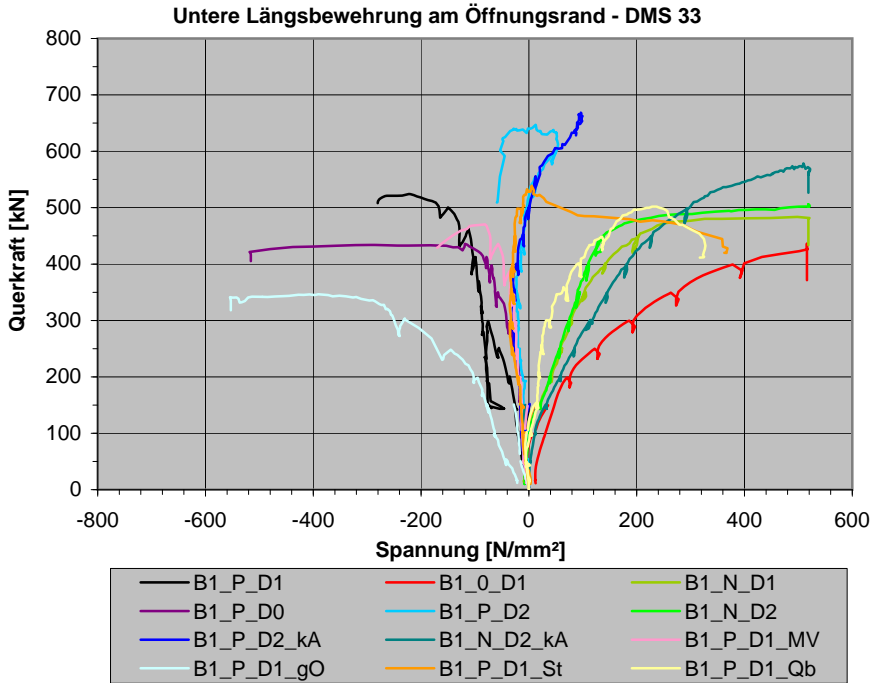


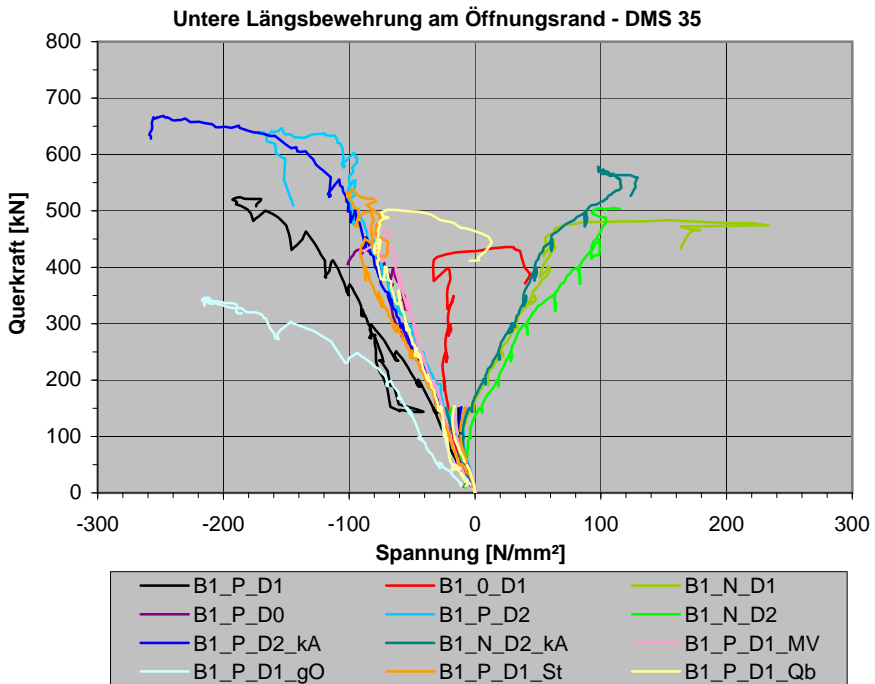
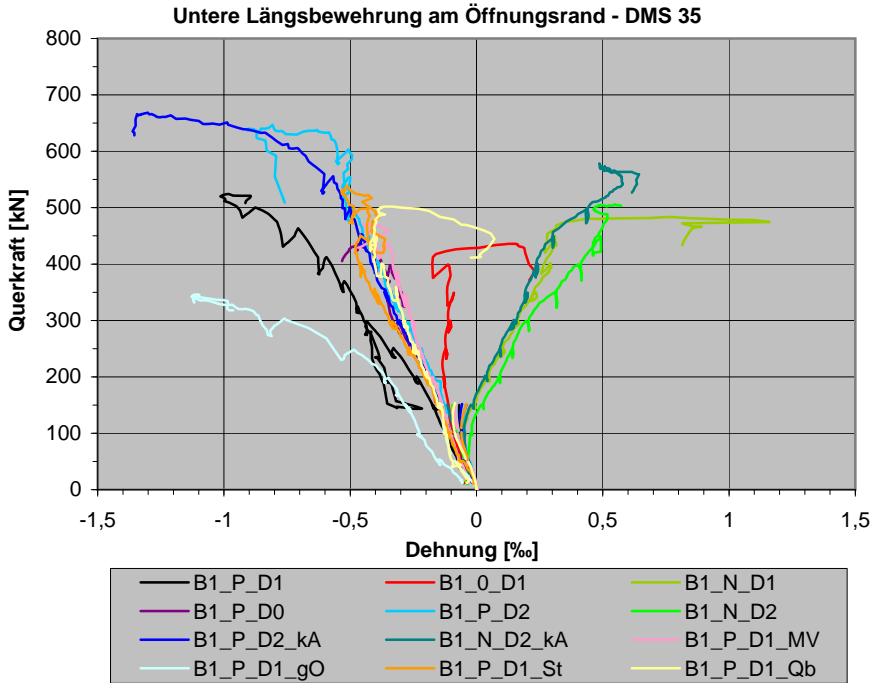


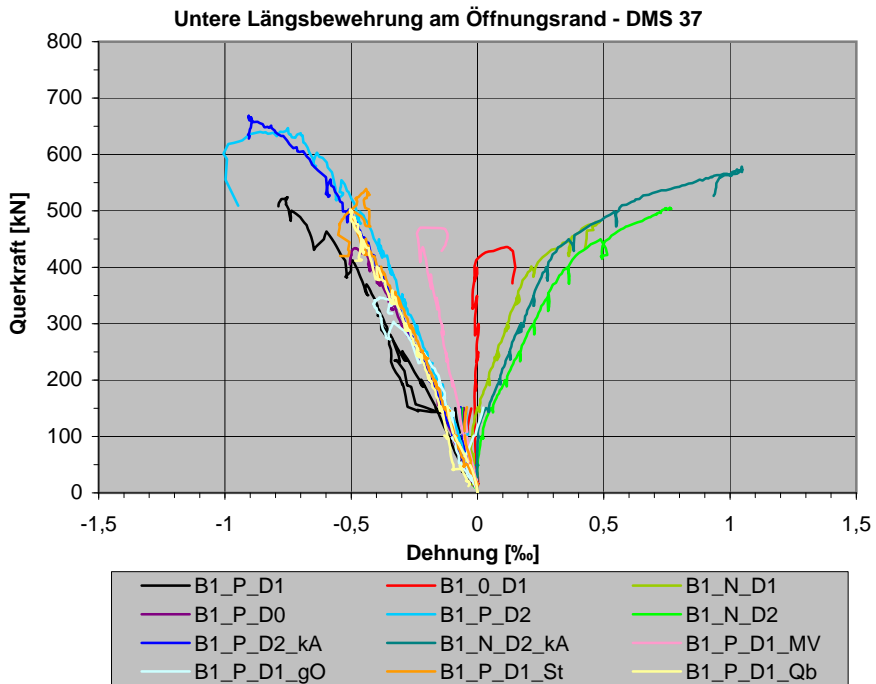
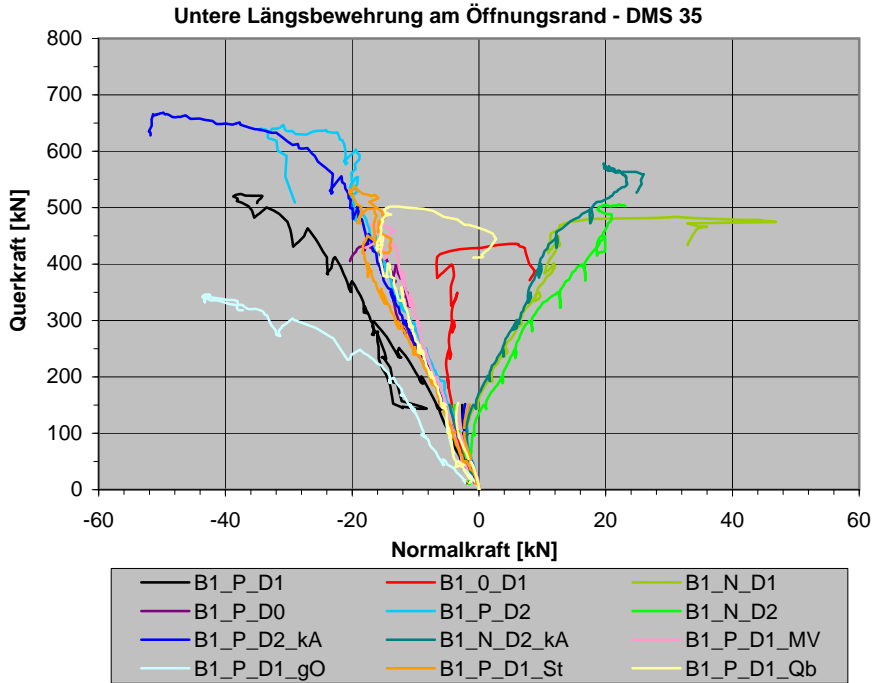
C.1.6. Längsbewehrung

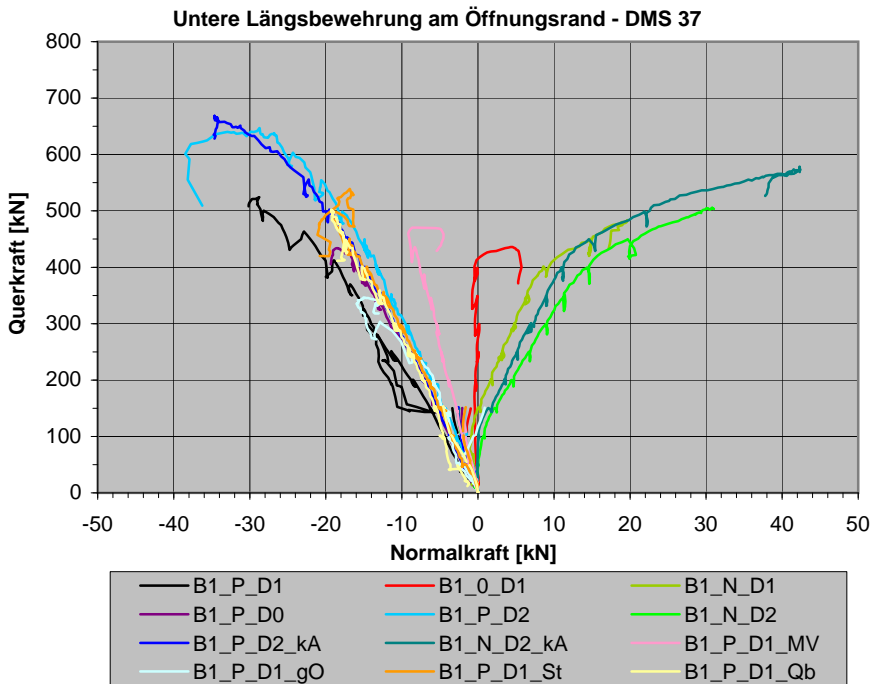
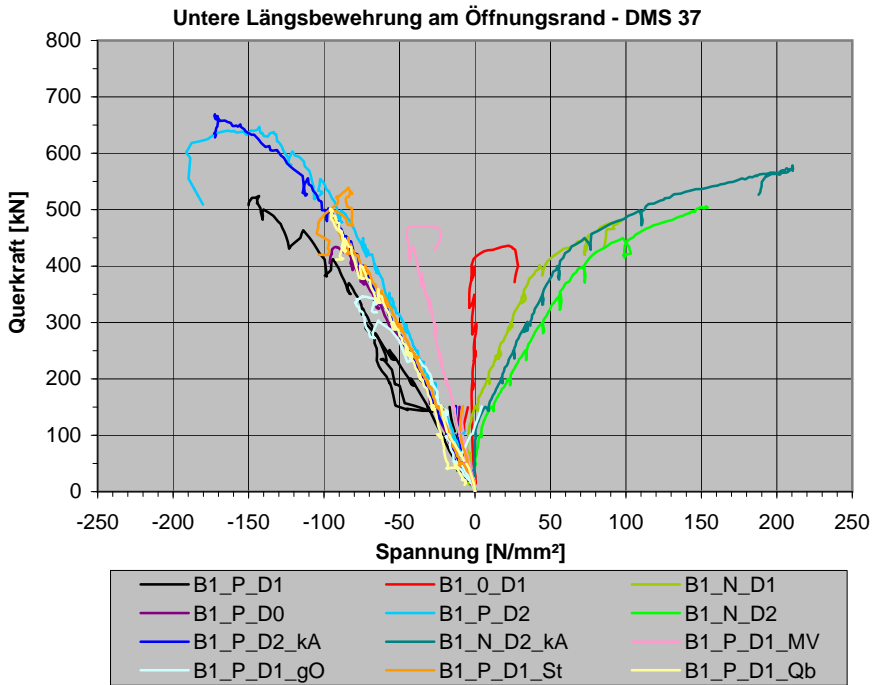


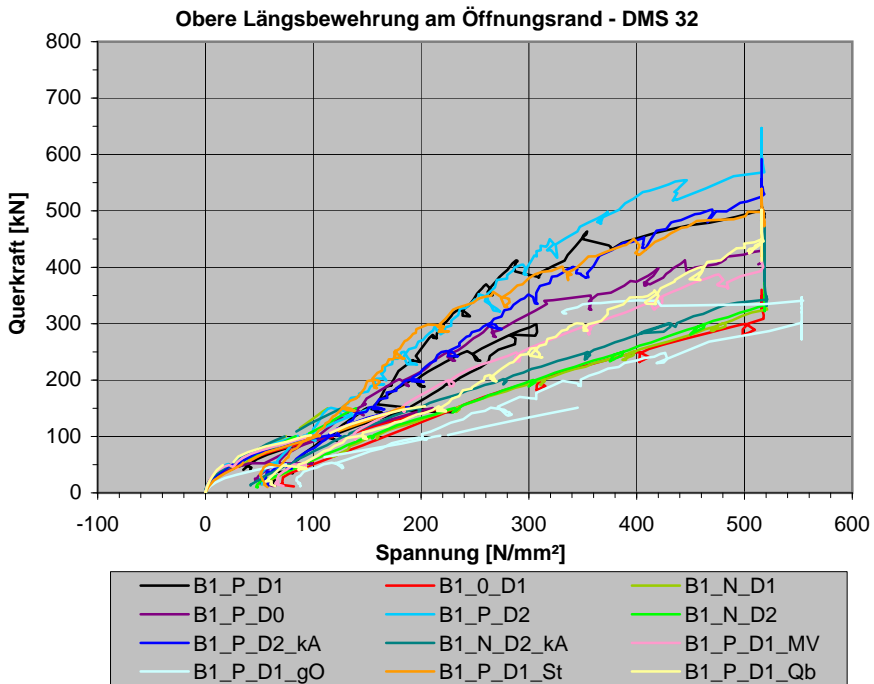
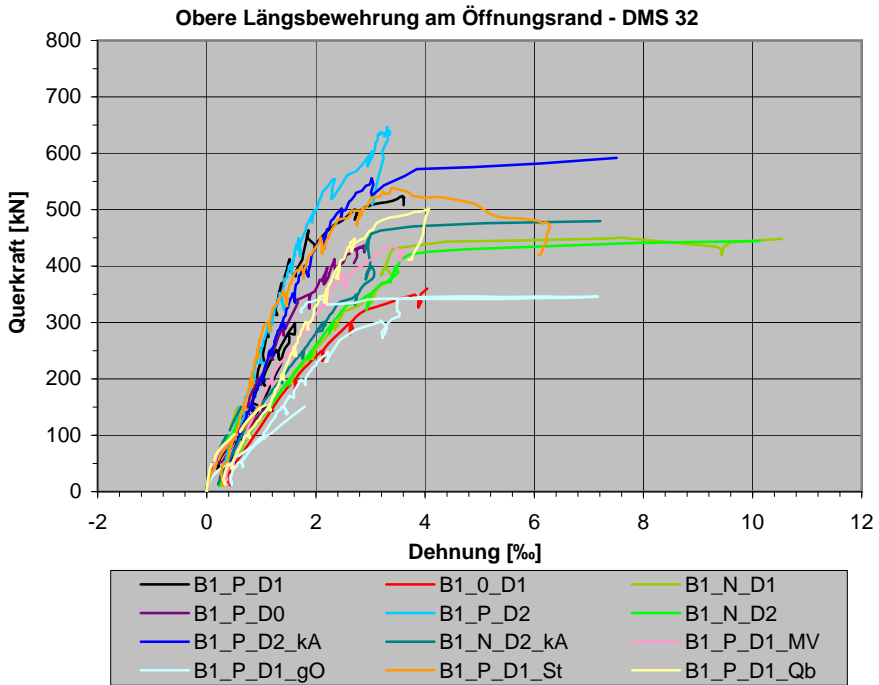


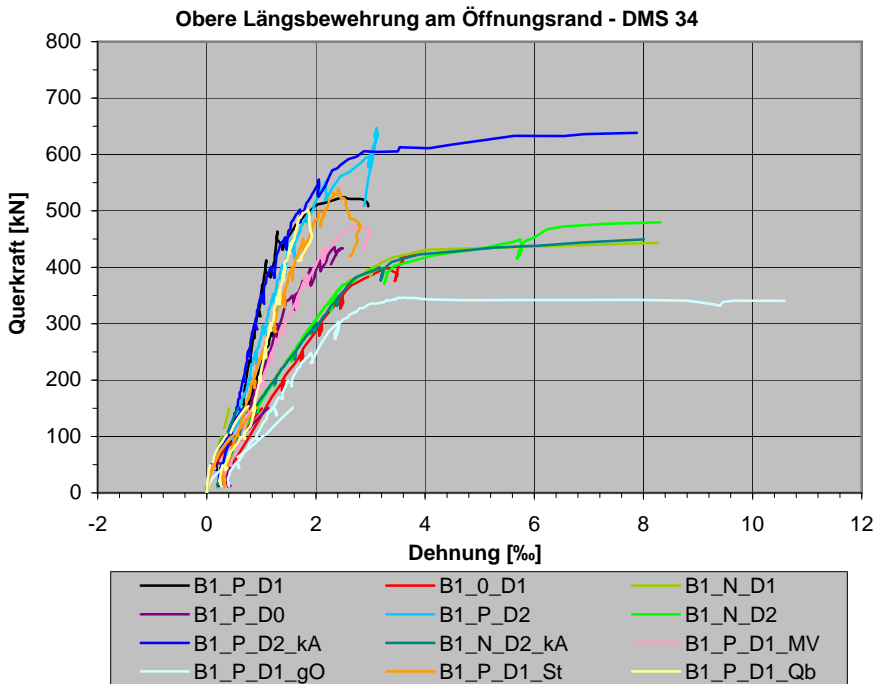
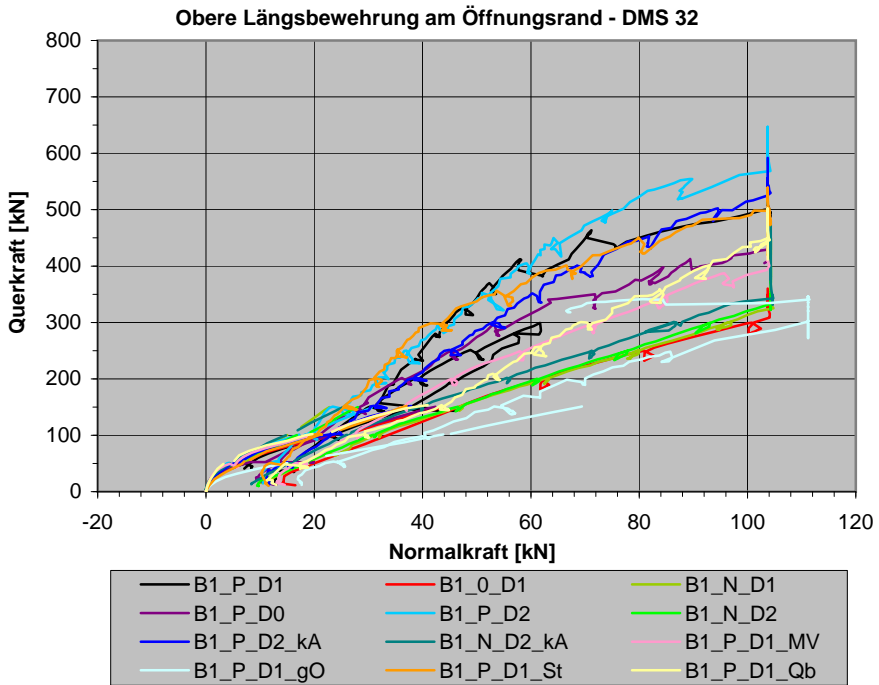


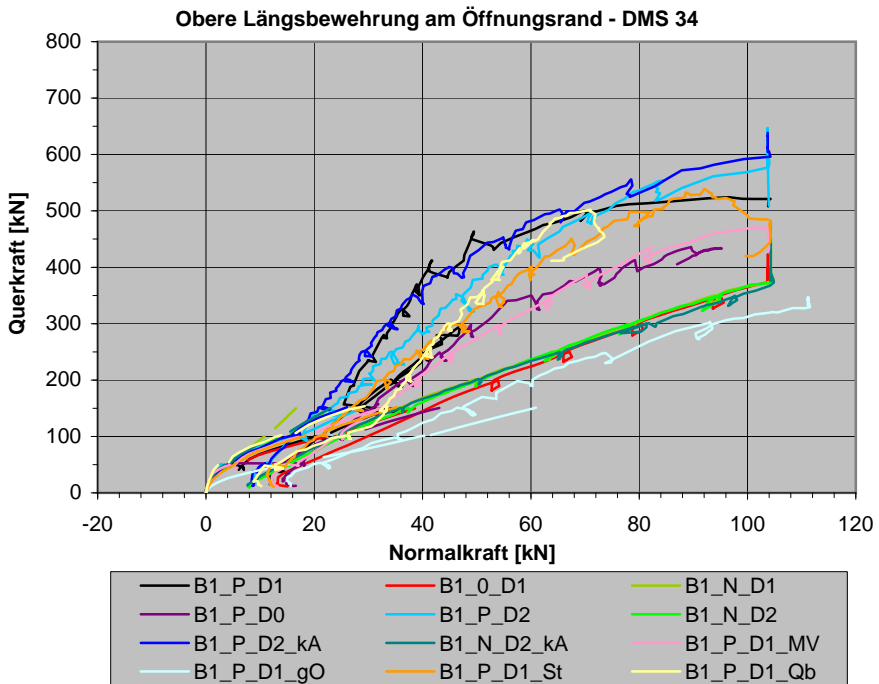
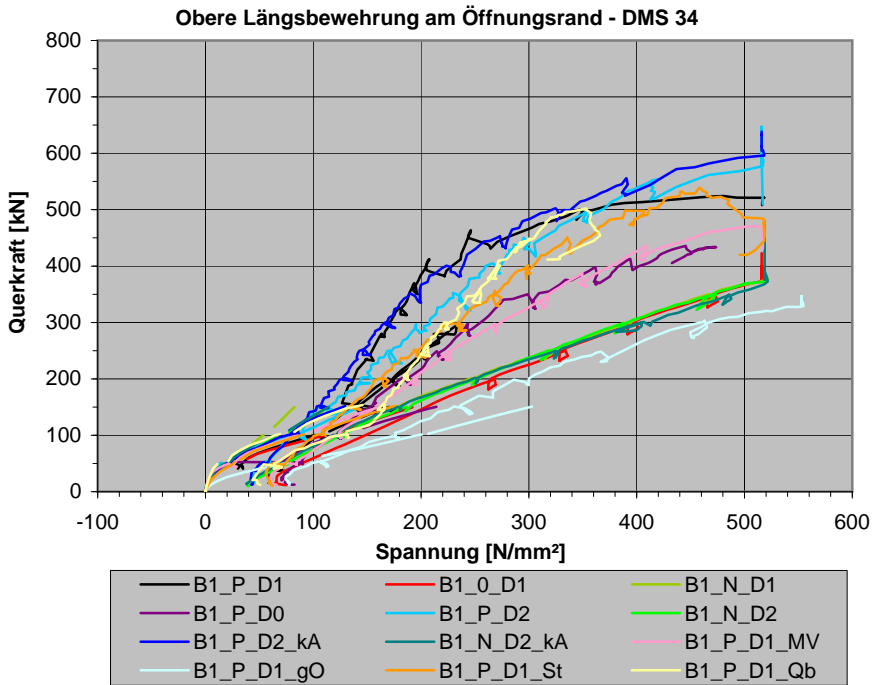


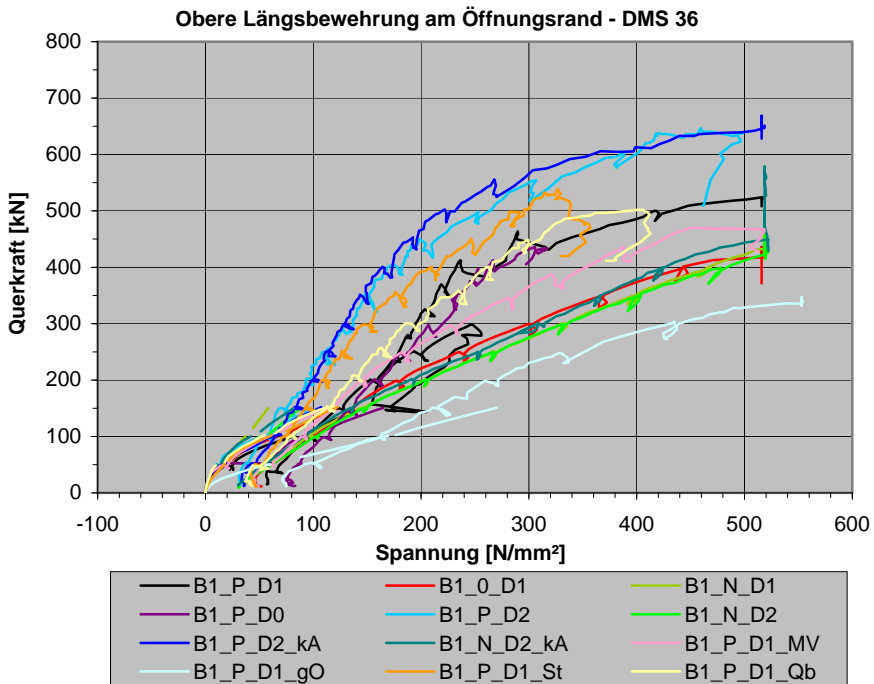
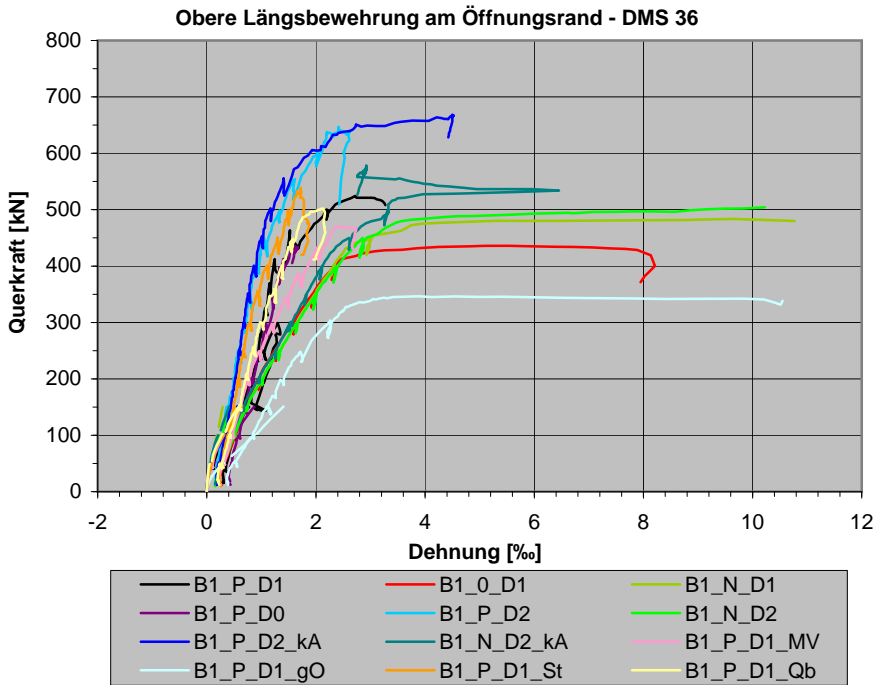


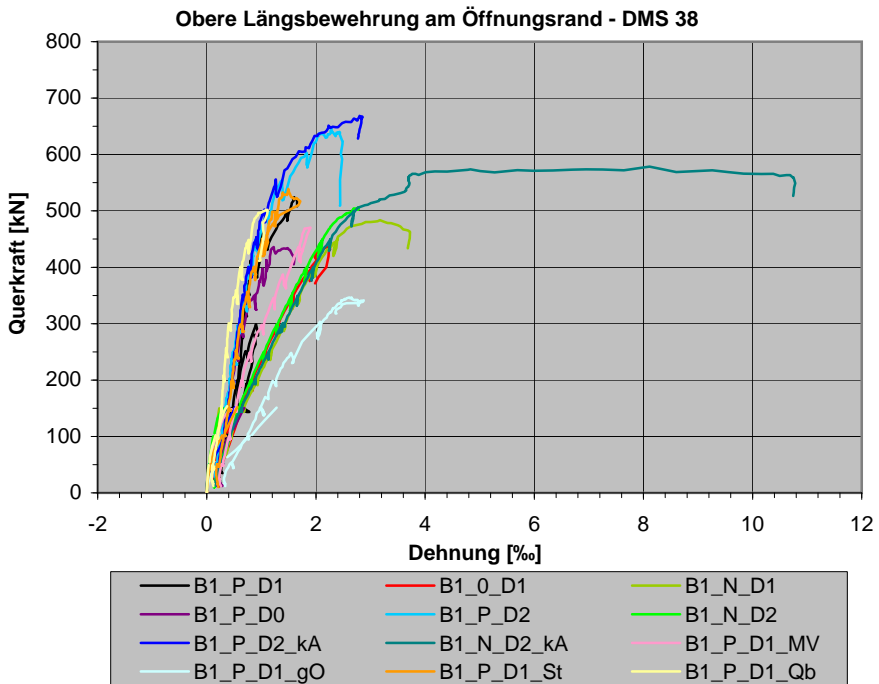
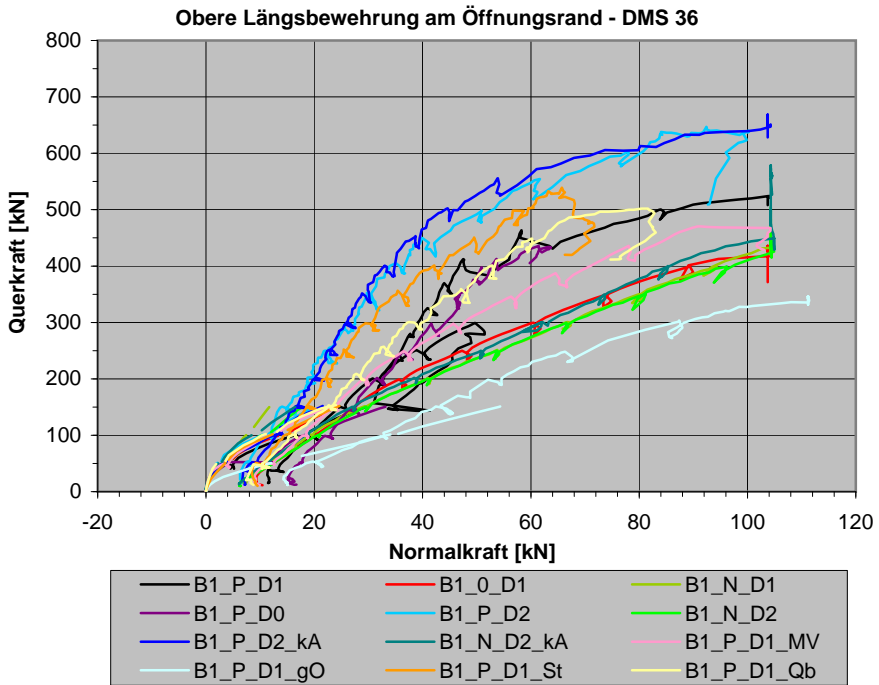


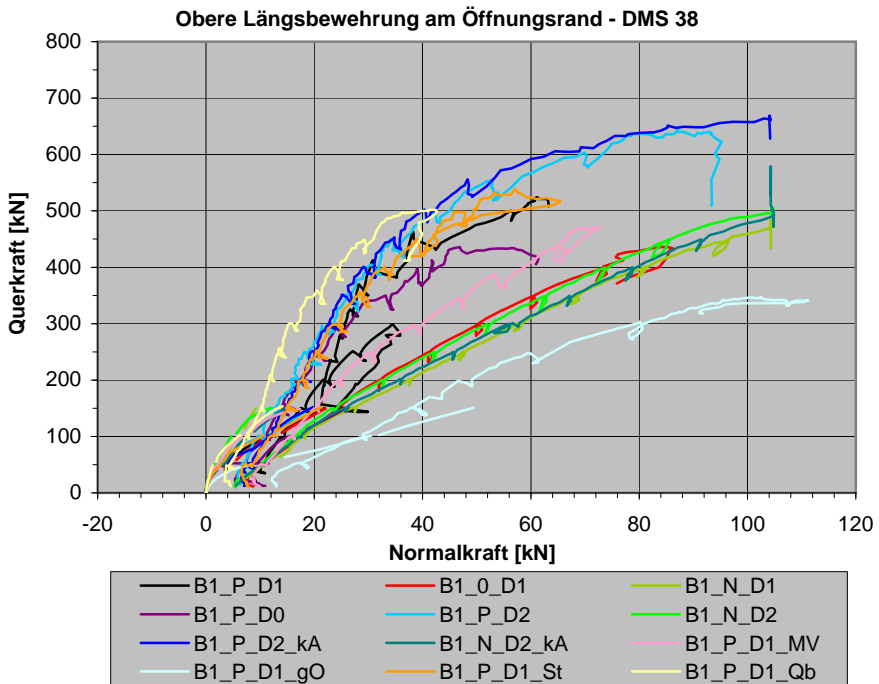
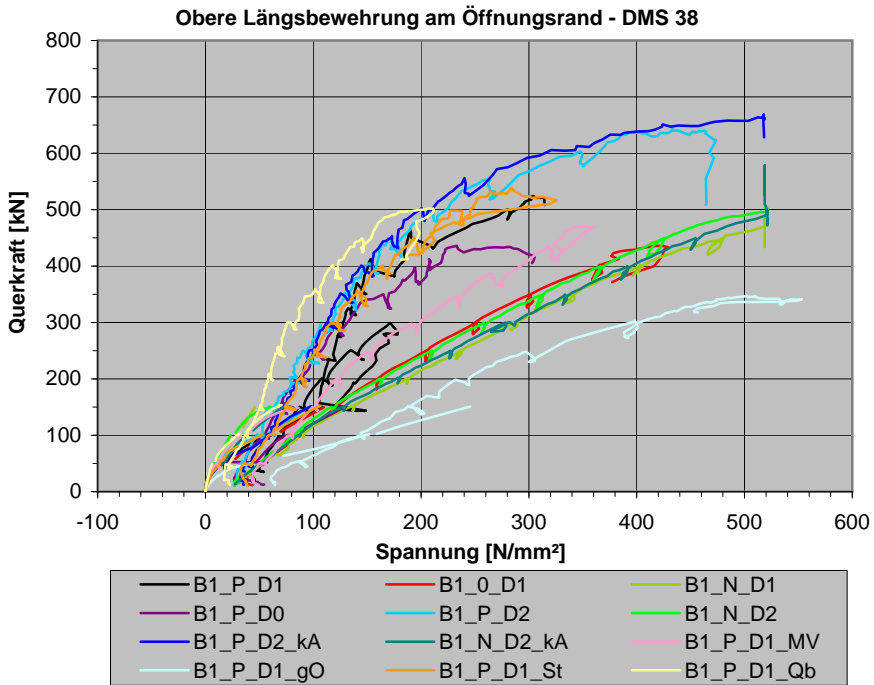




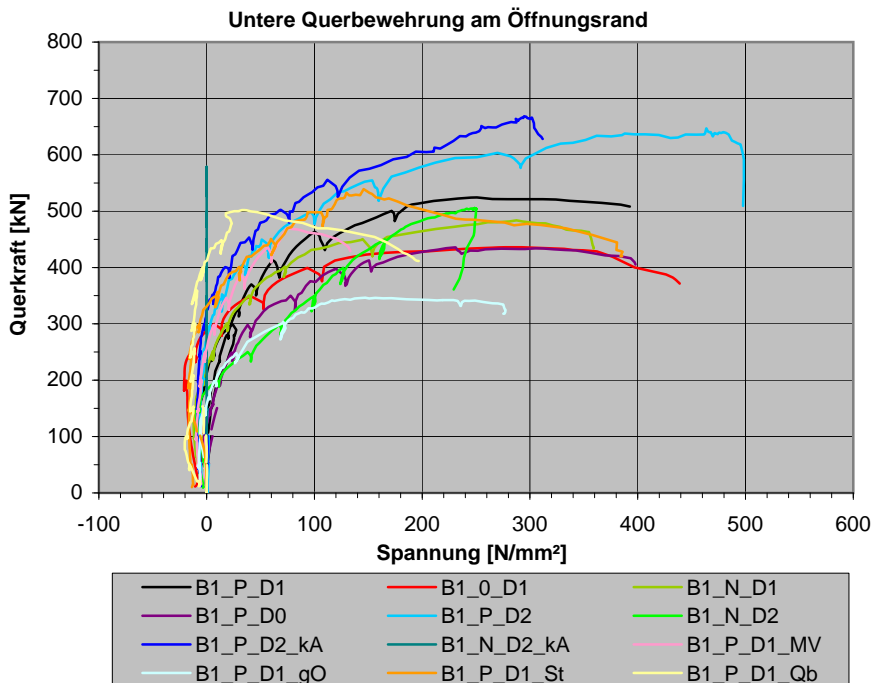
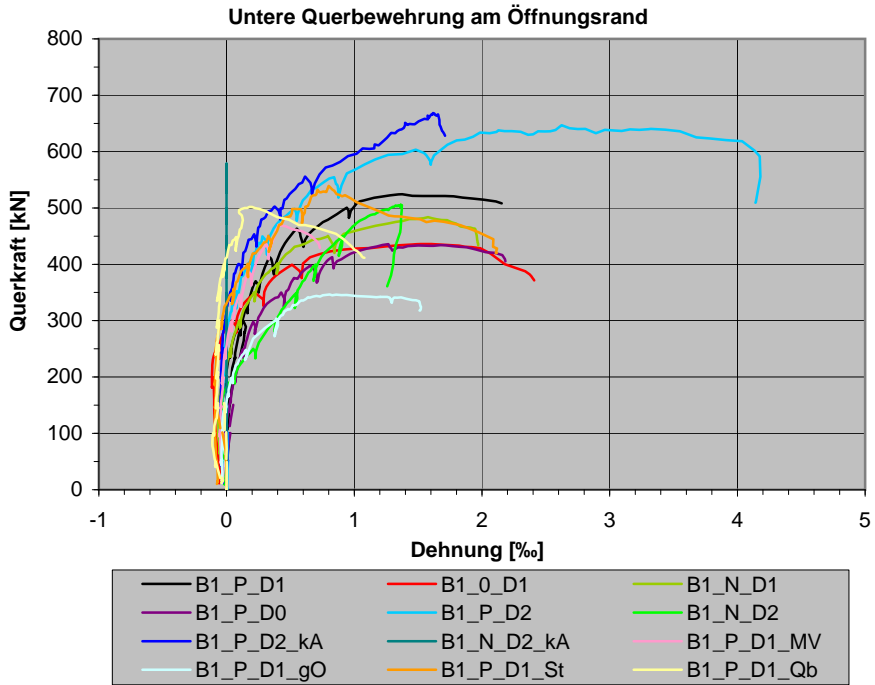


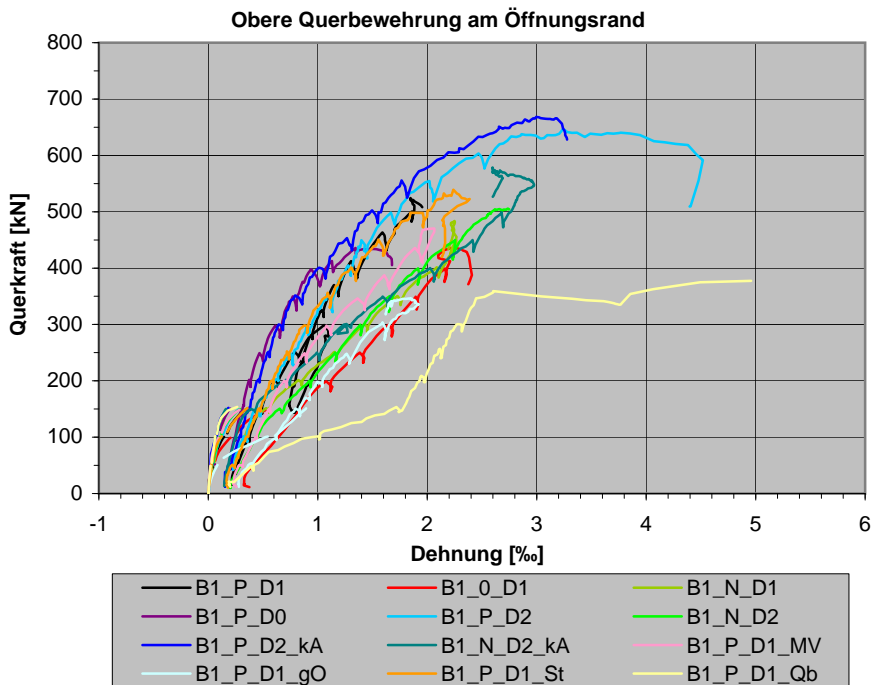
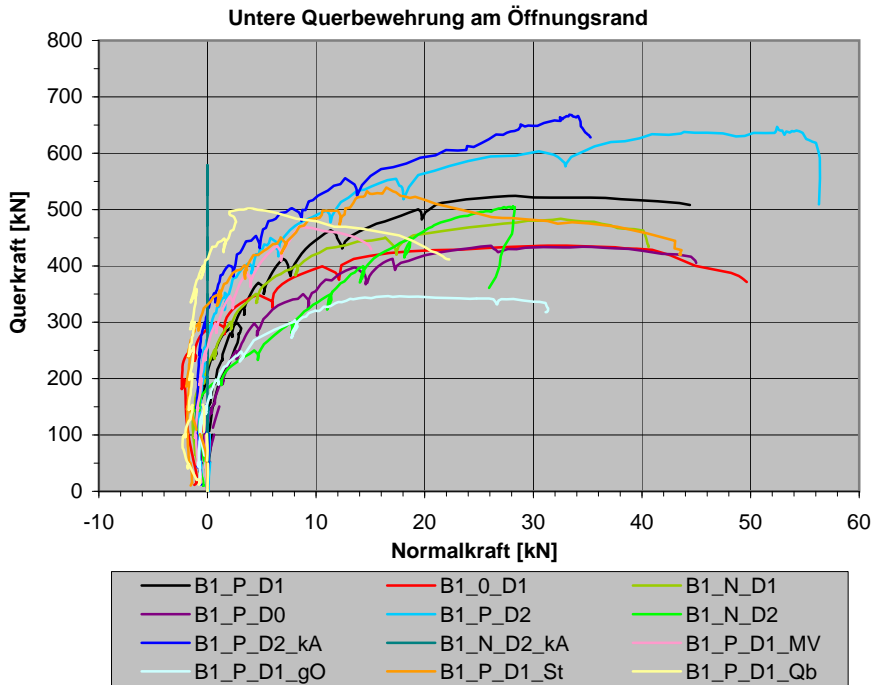


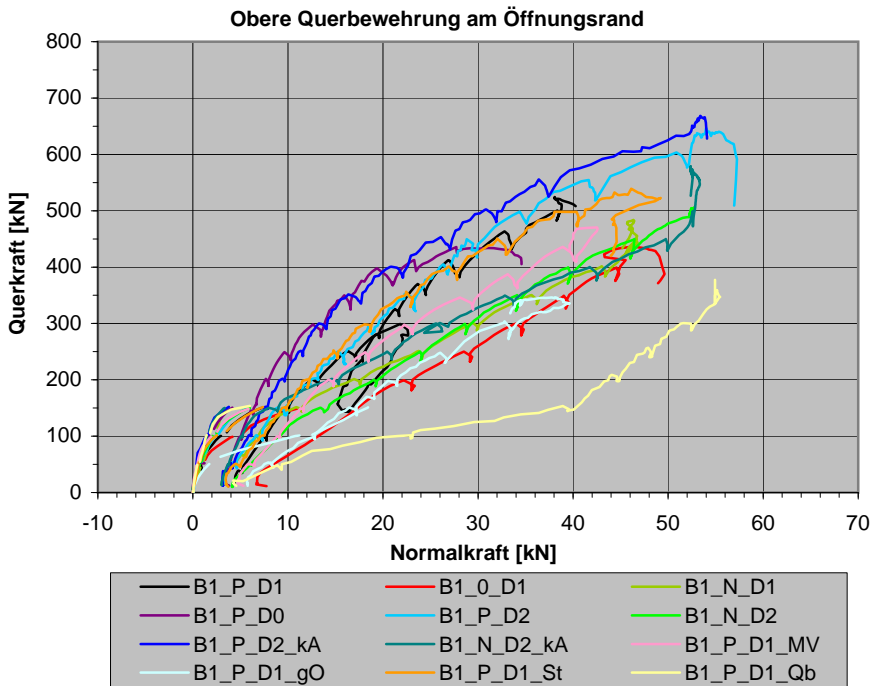
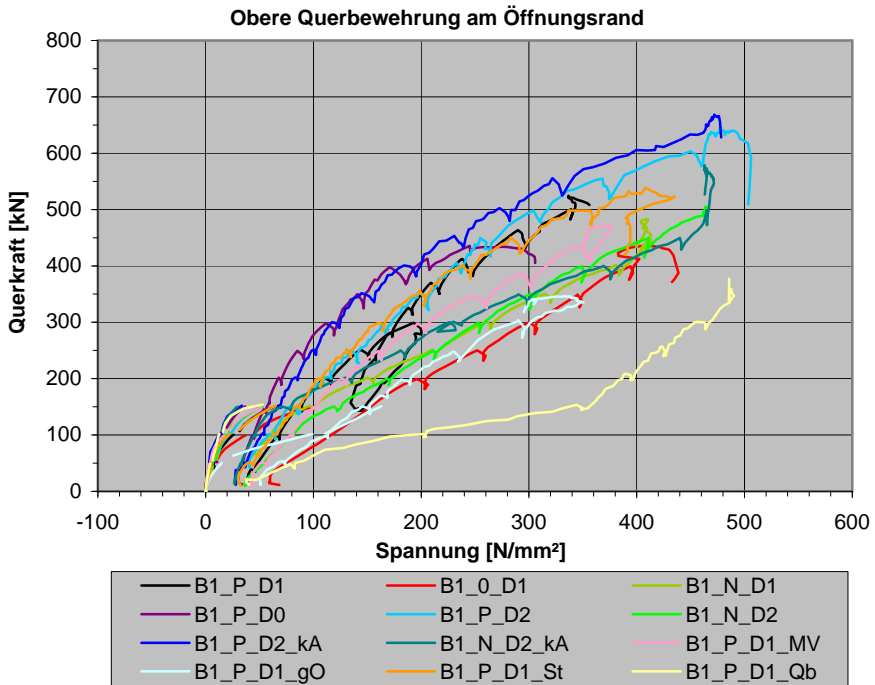




C.1.7. Querbewehrung

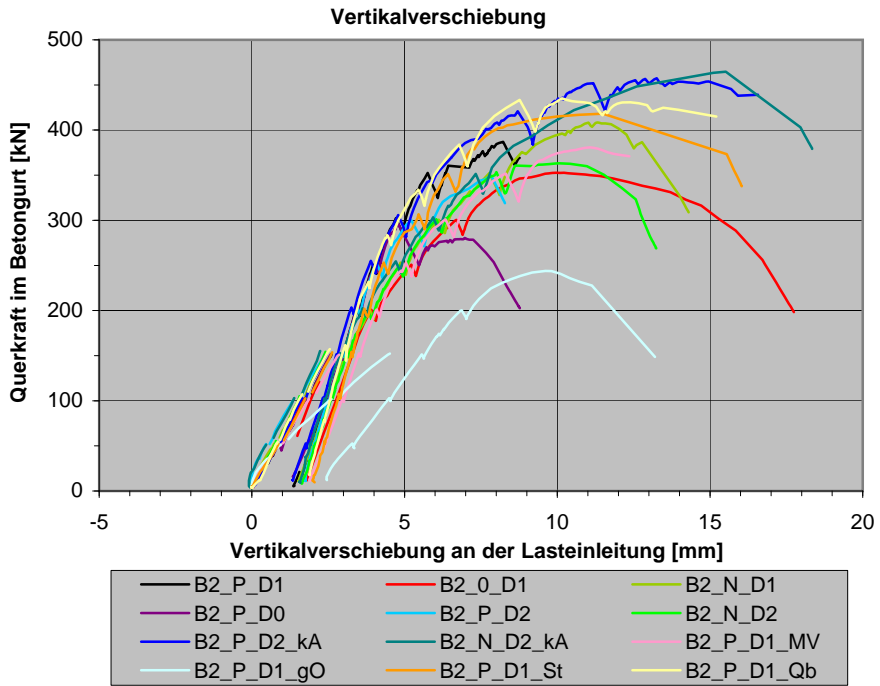


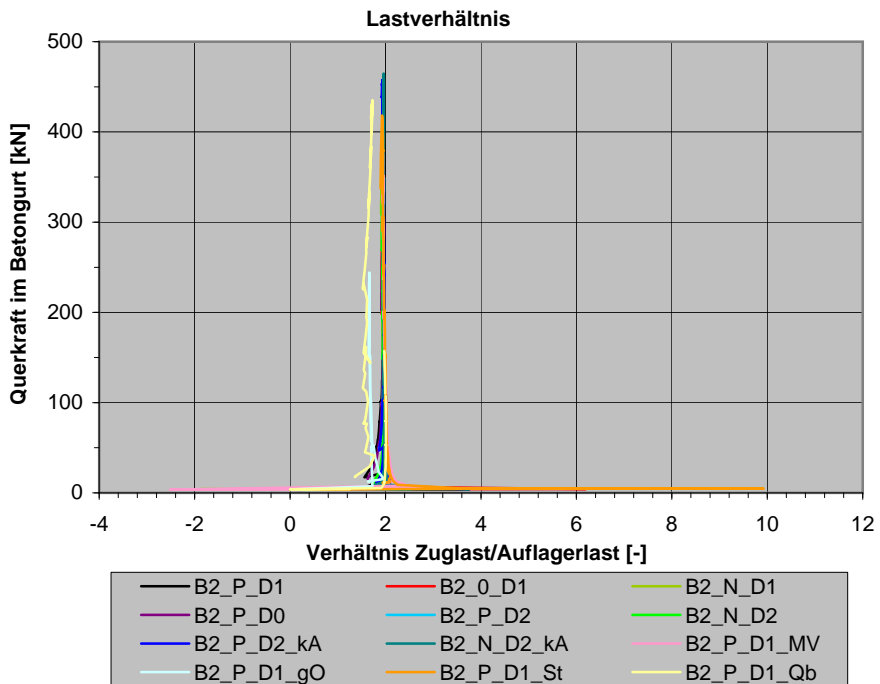
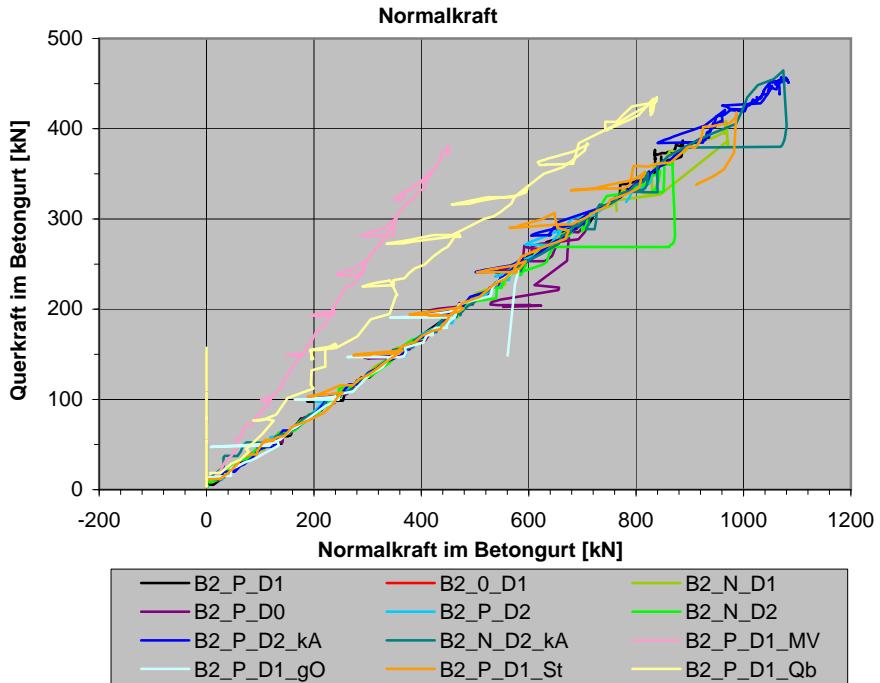




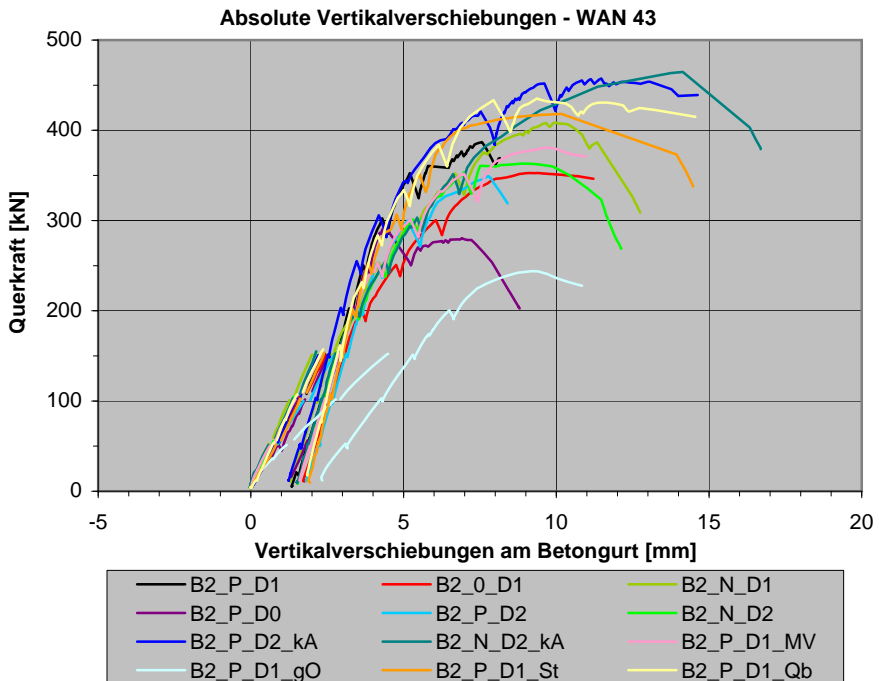
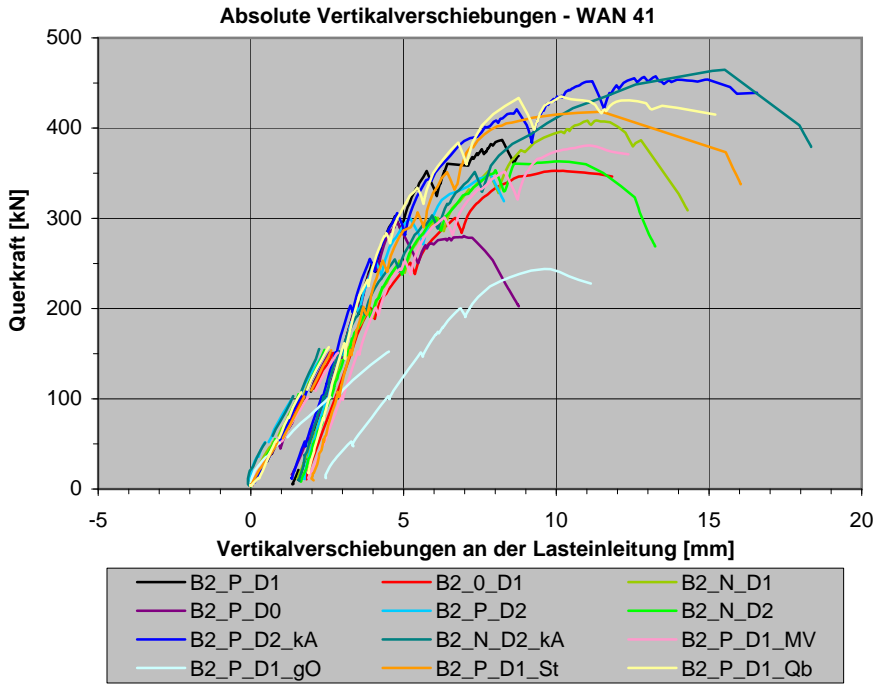
C.2. Bereich 2

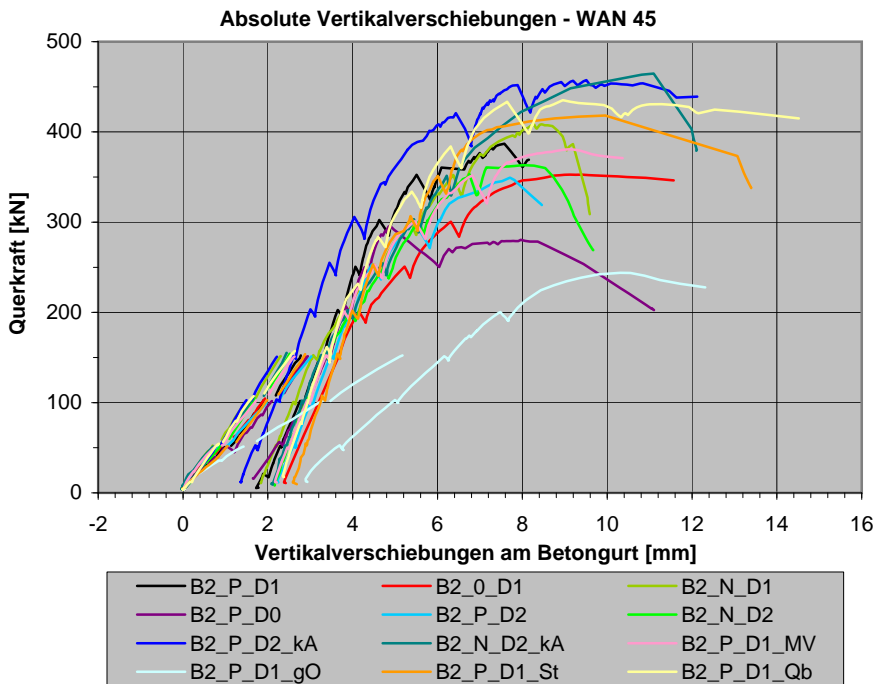
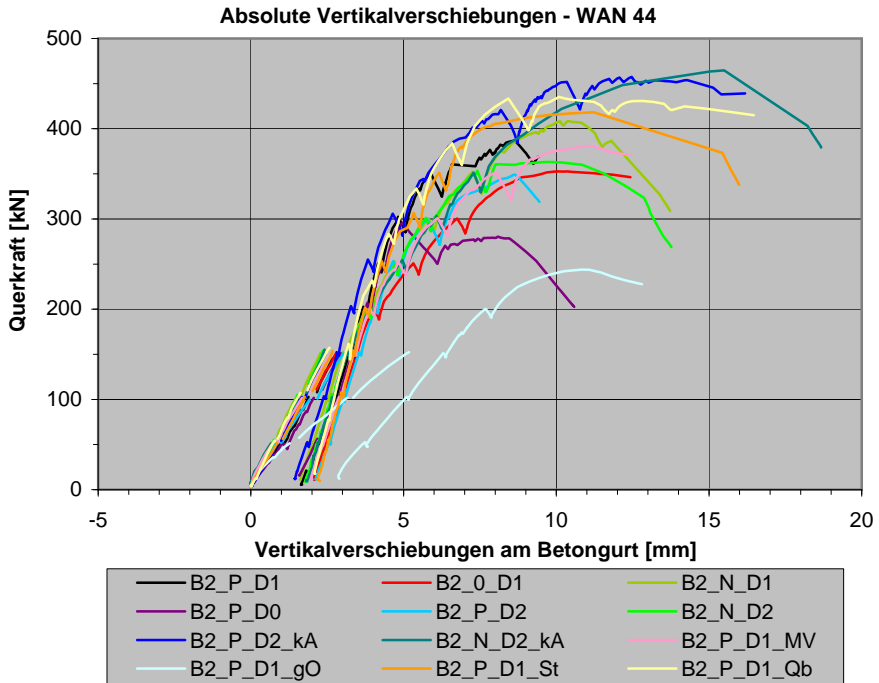
C.2.1. Kräfte

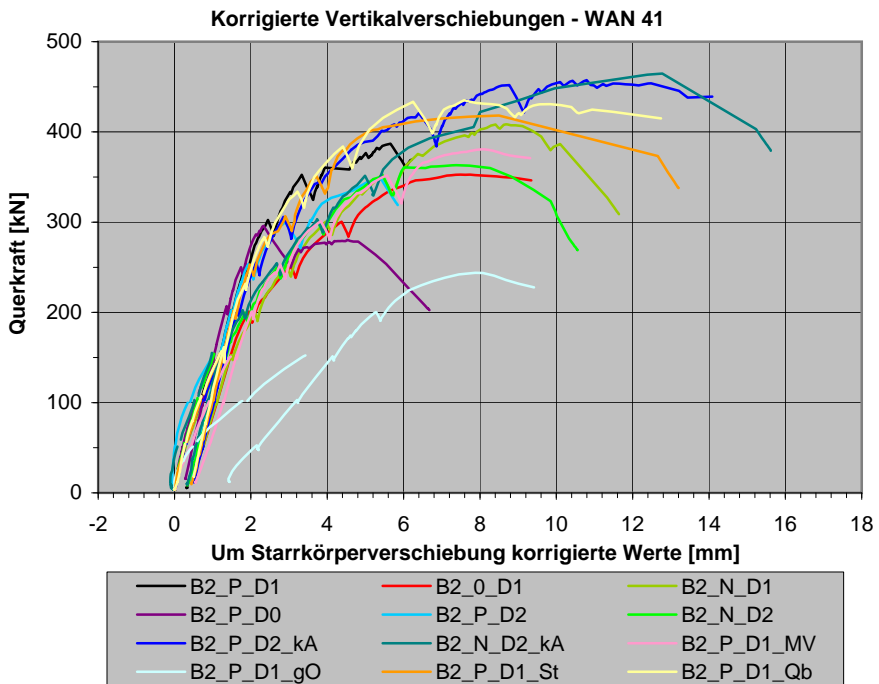
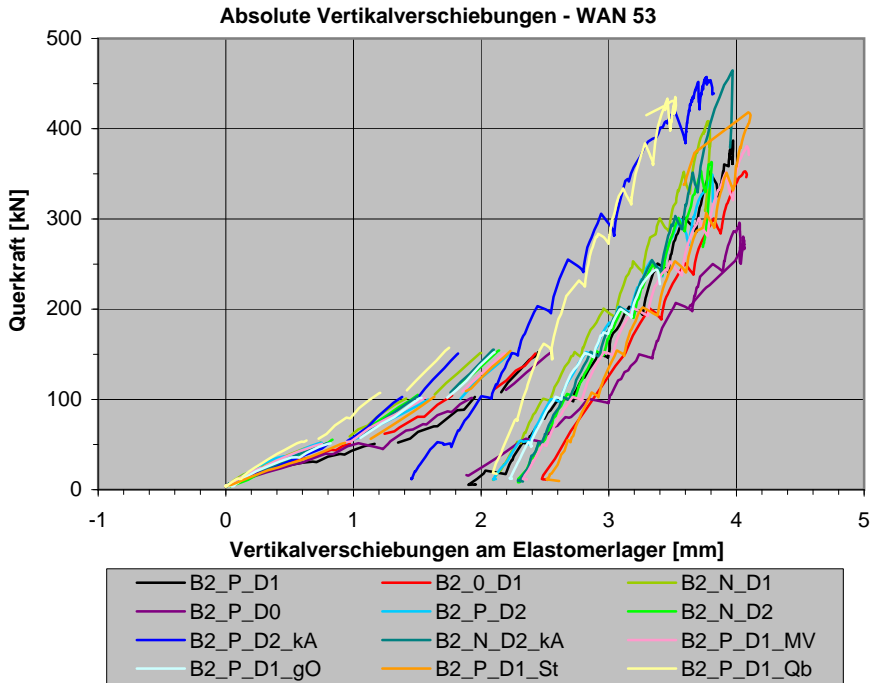


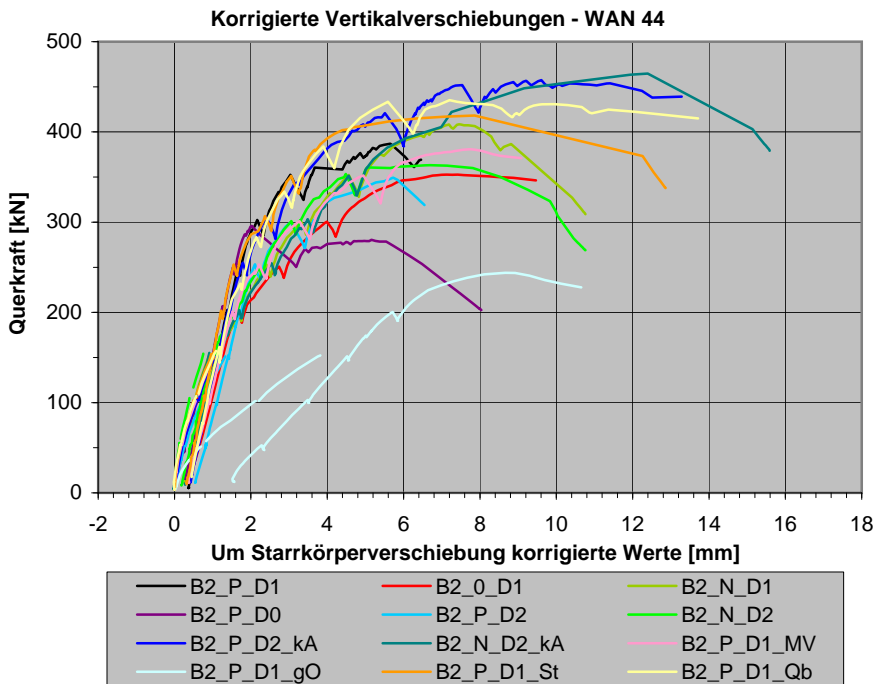
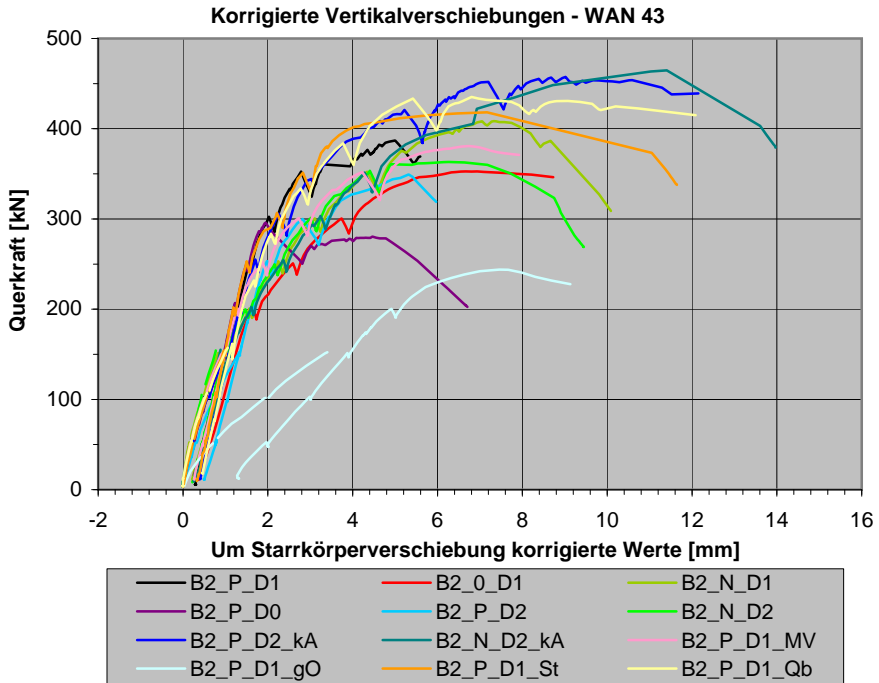


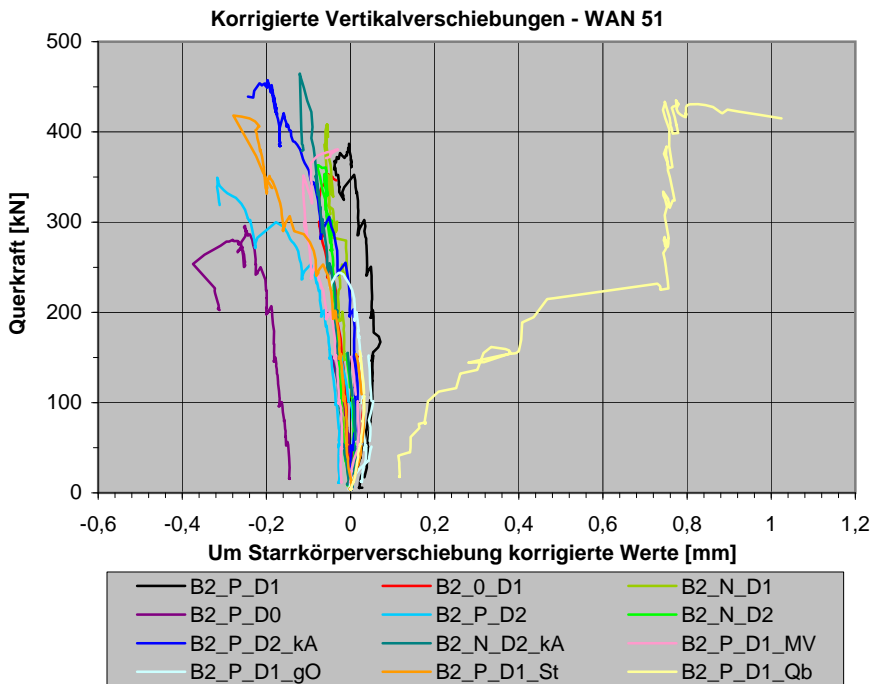
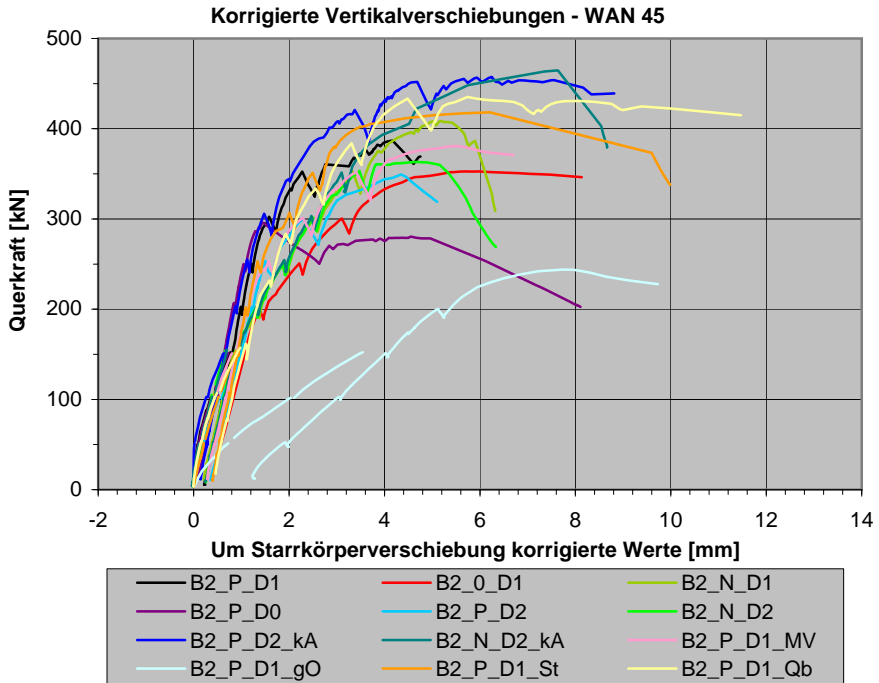
C.2.2. Verformungen

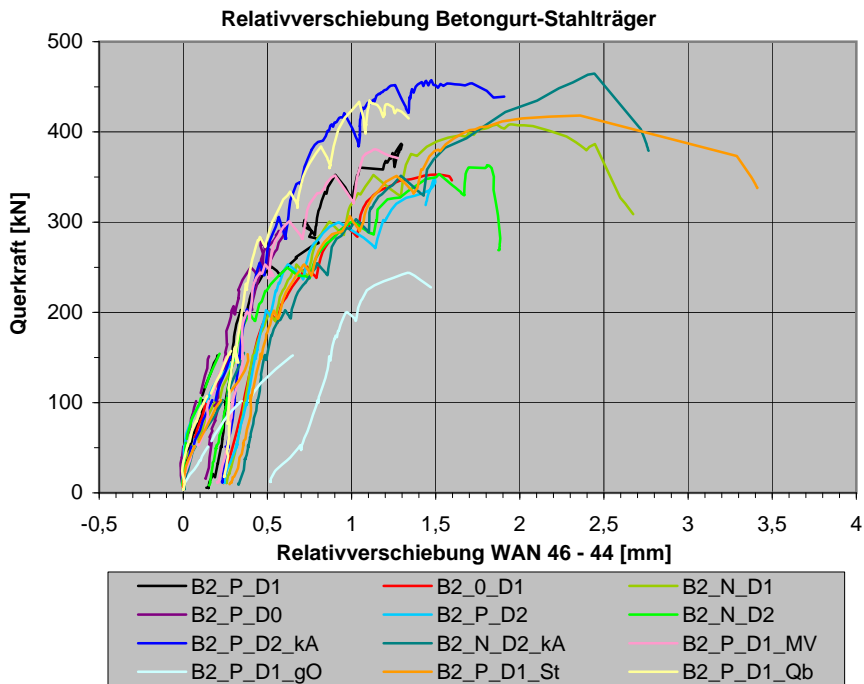
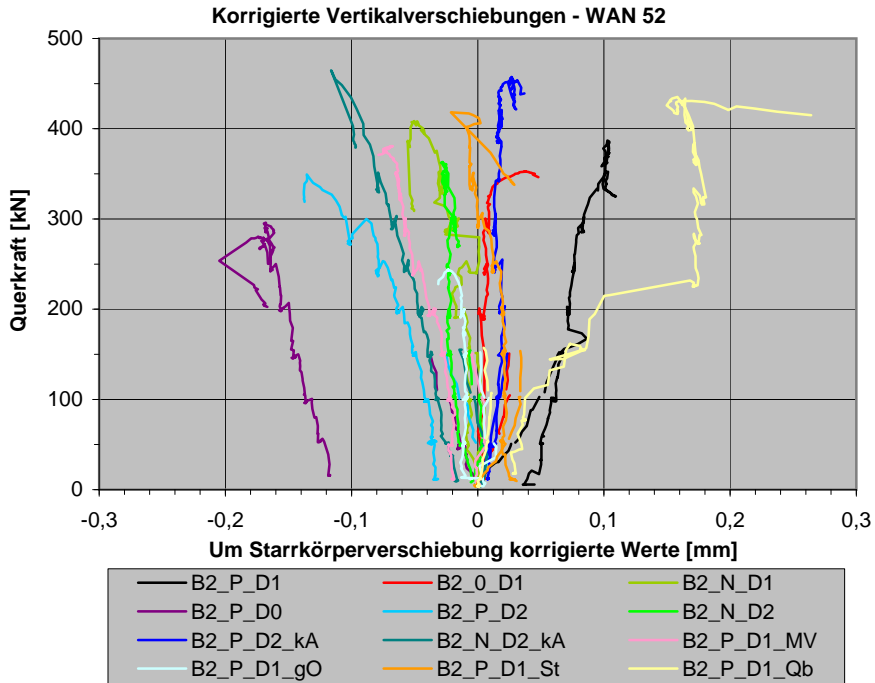




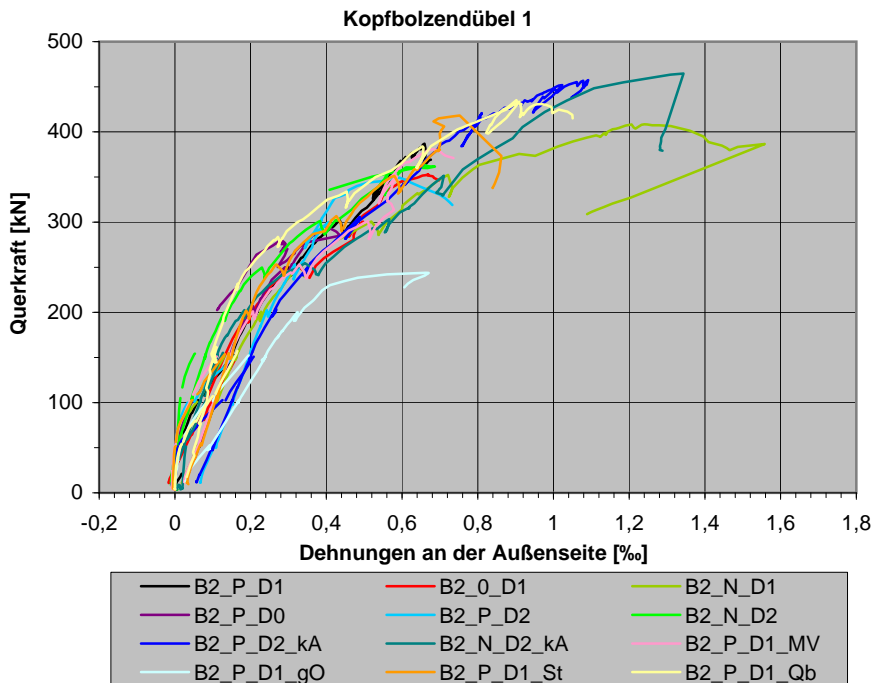
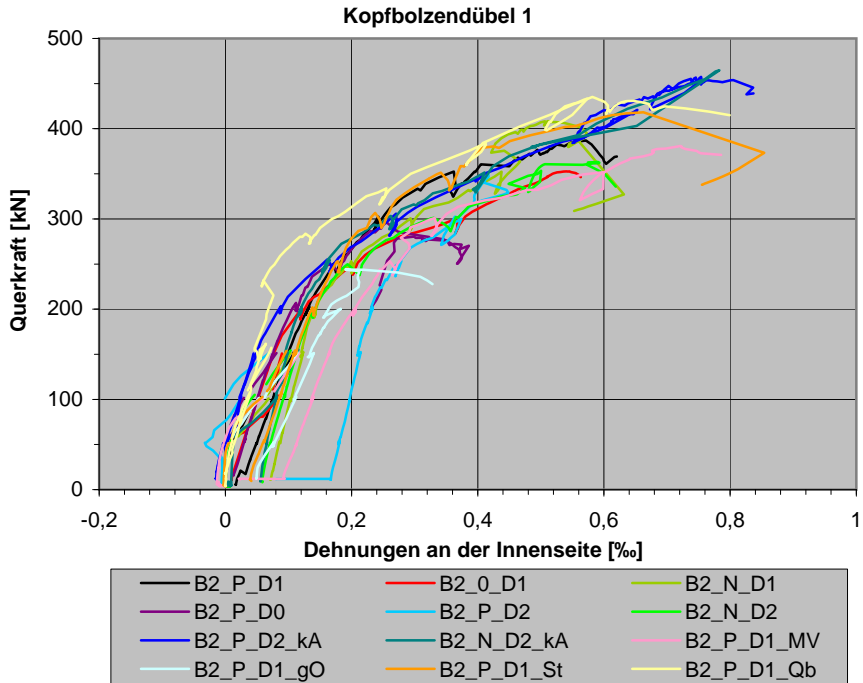


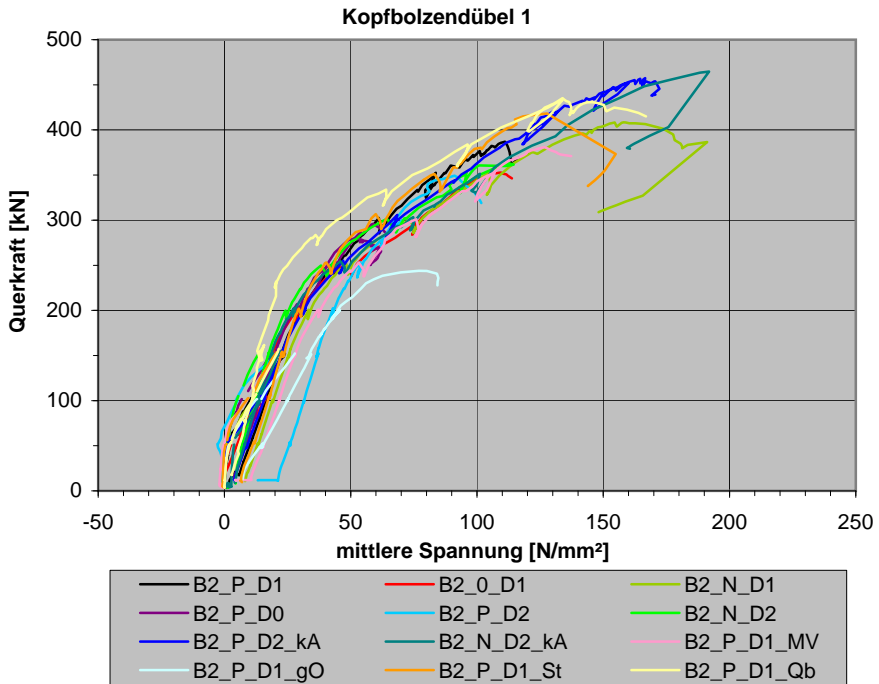
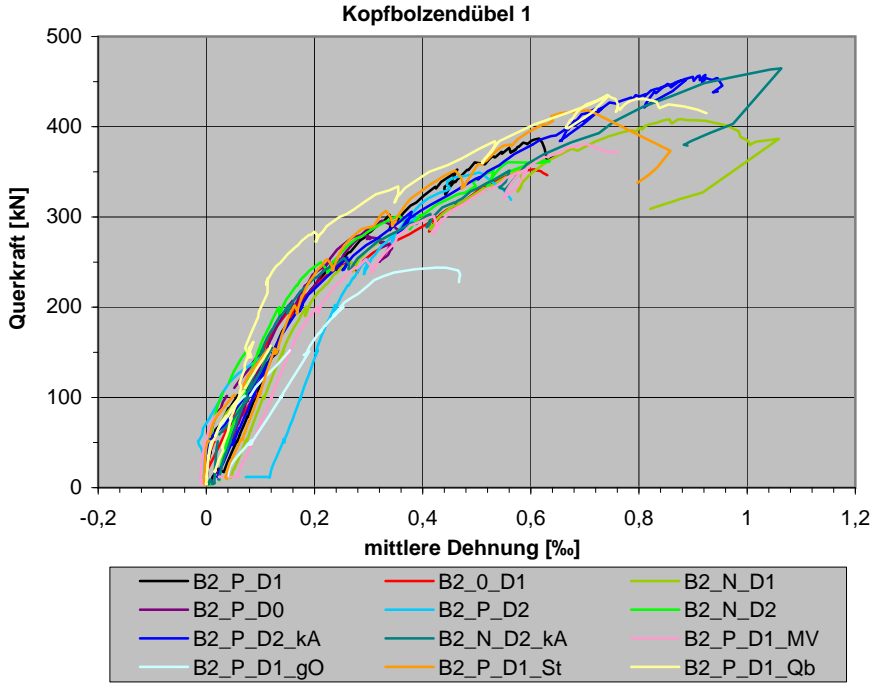


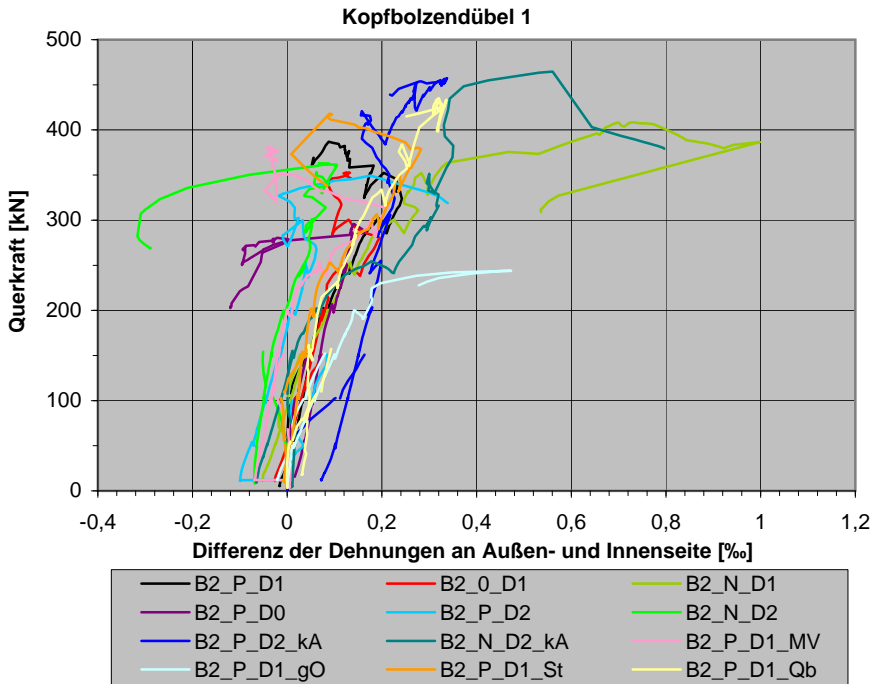
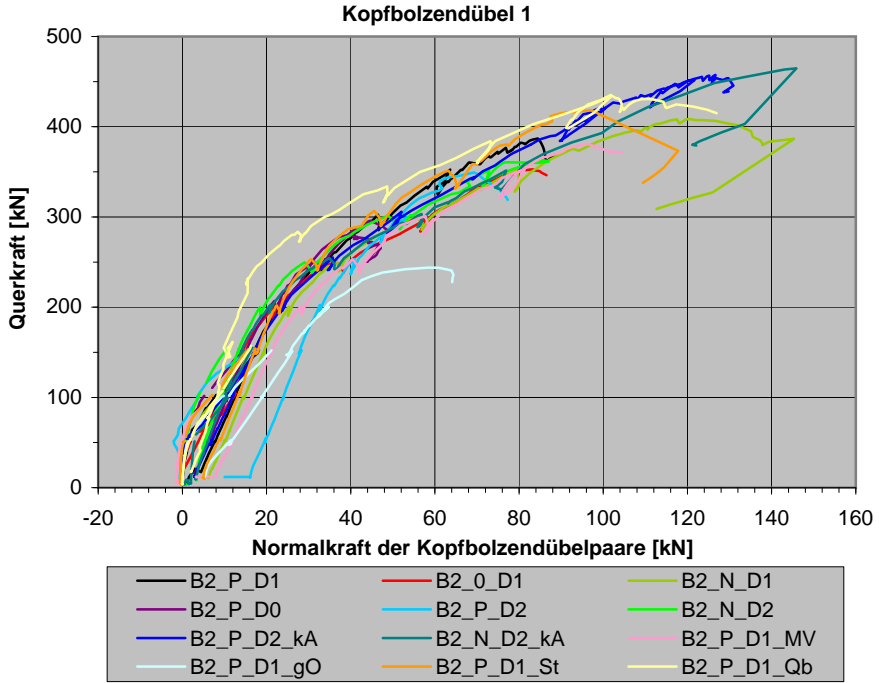


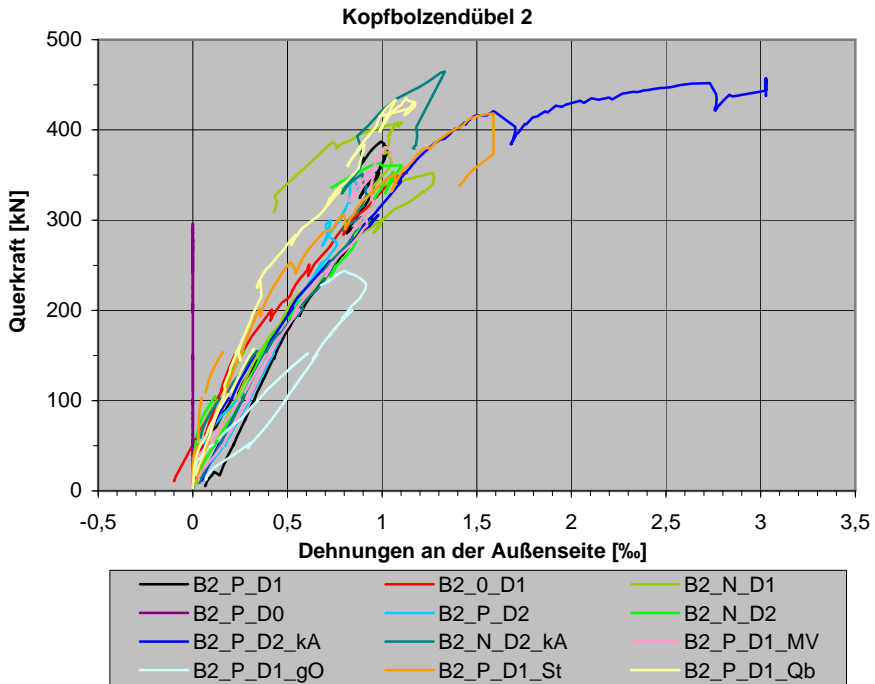
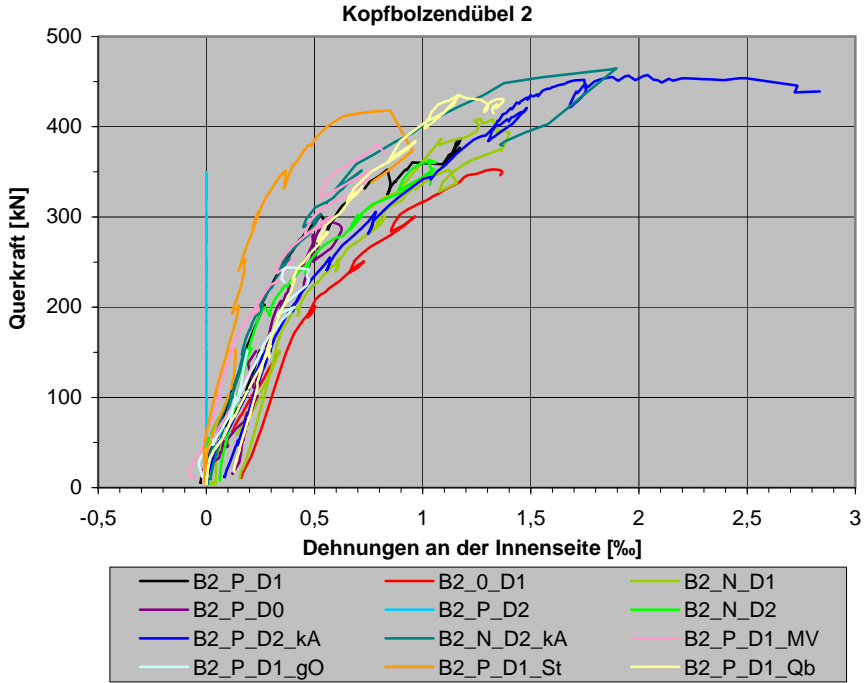


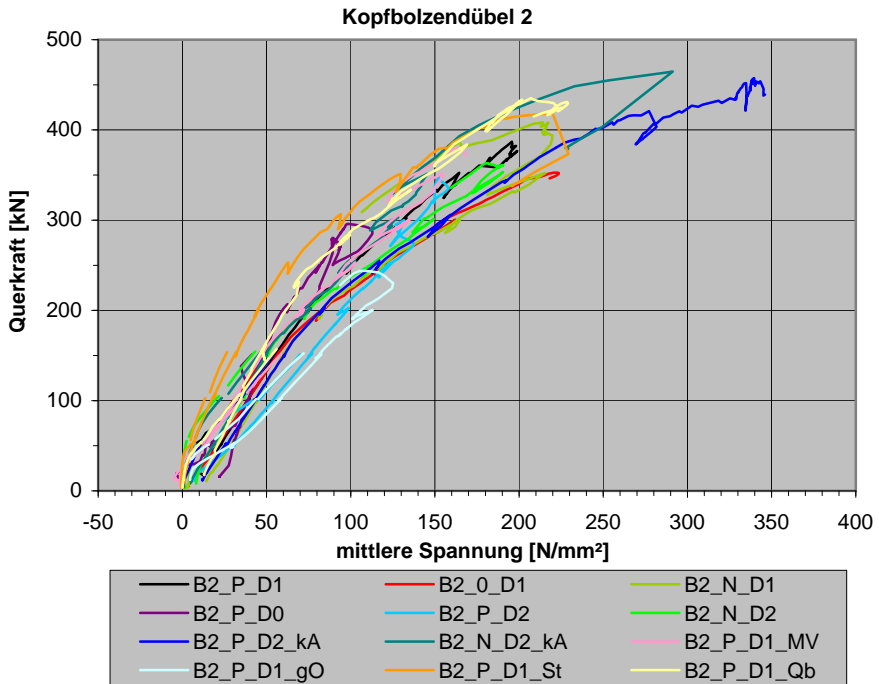
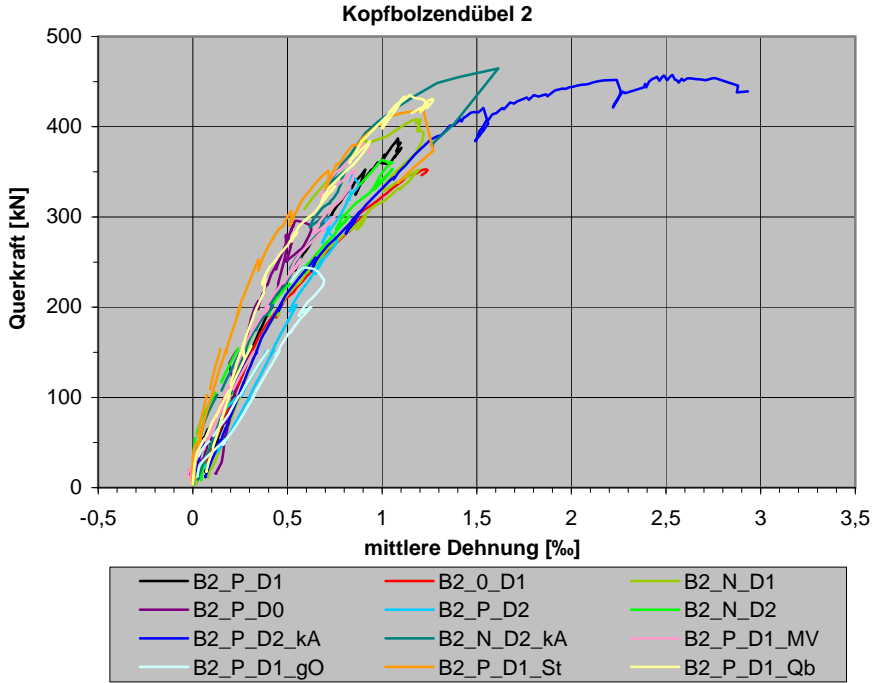
C.2.3. Kopfbolzendübel

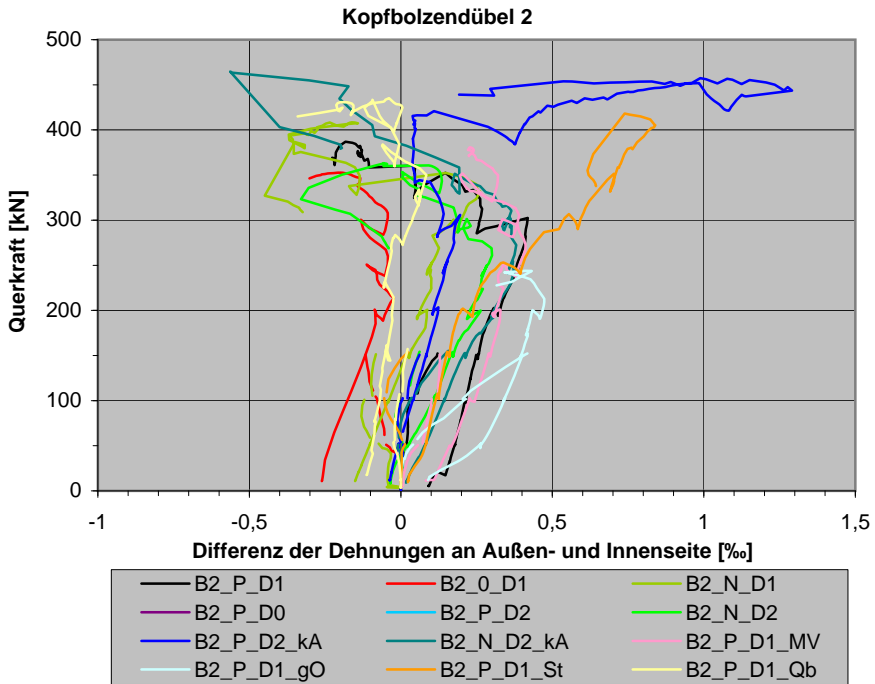
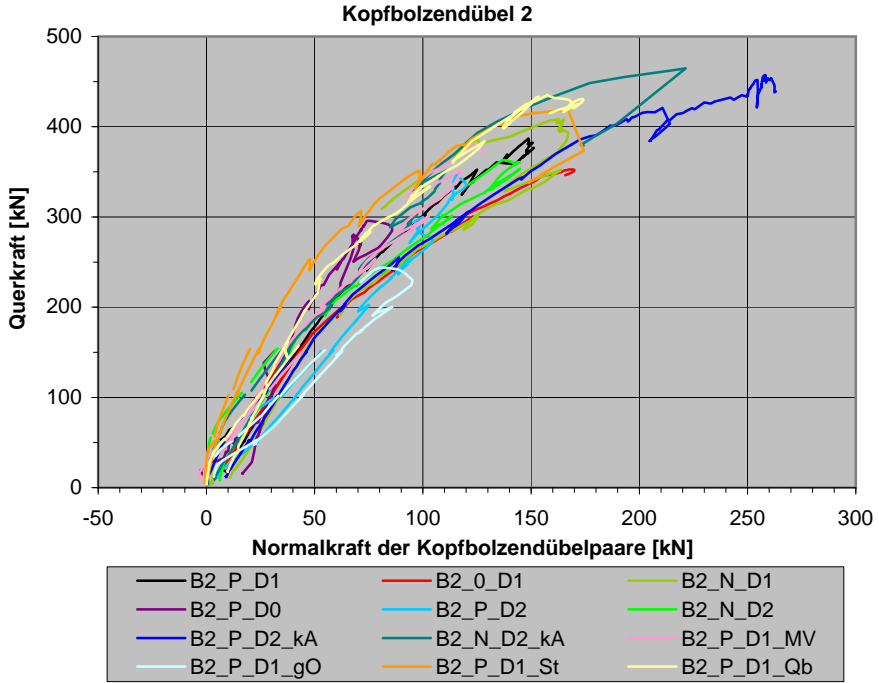


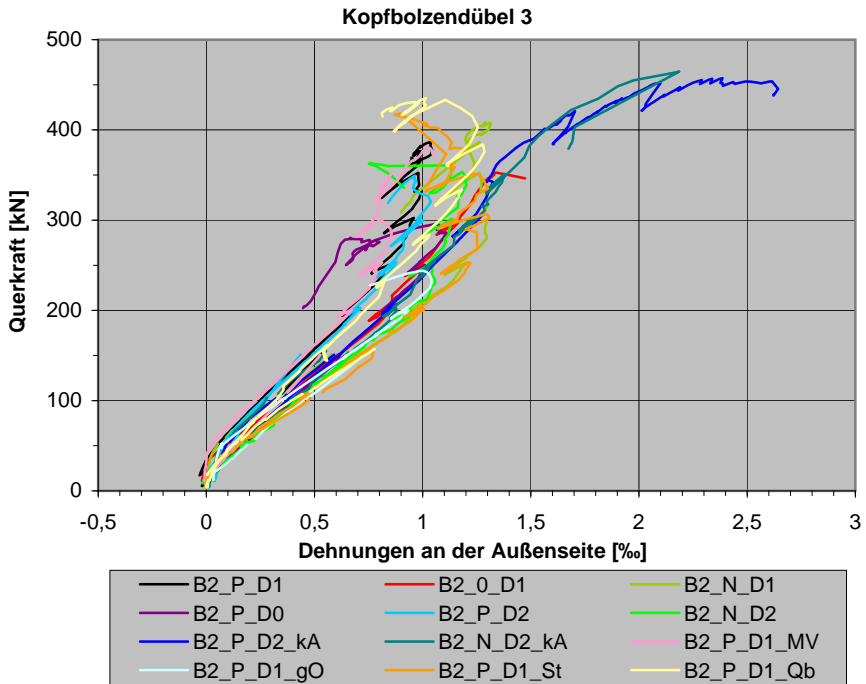
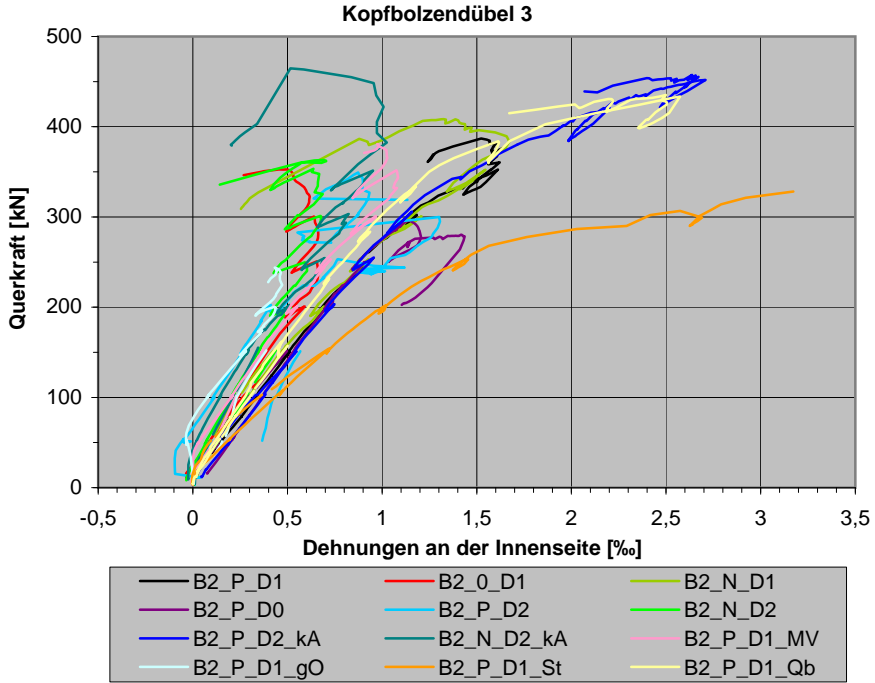


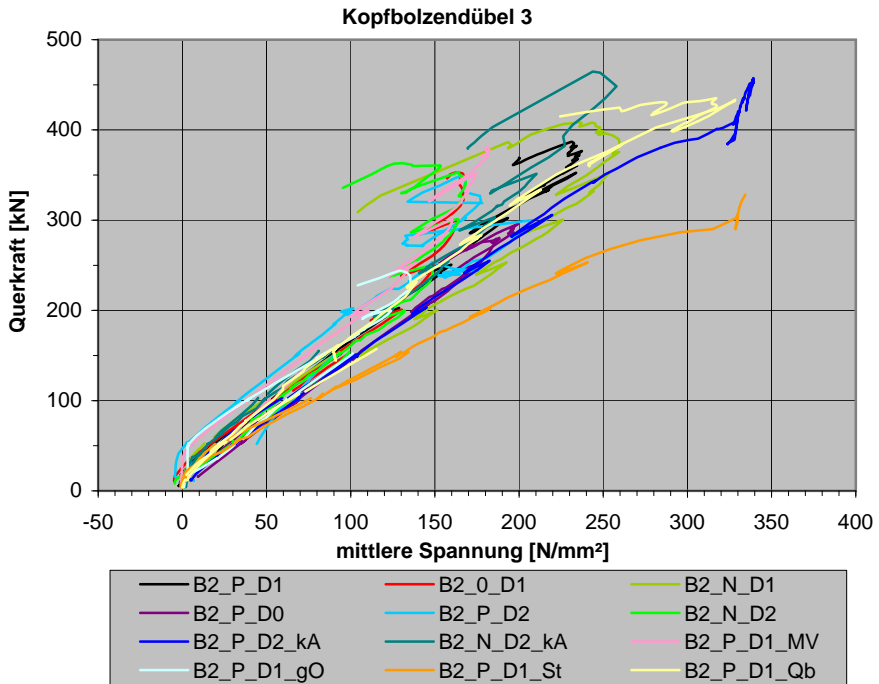
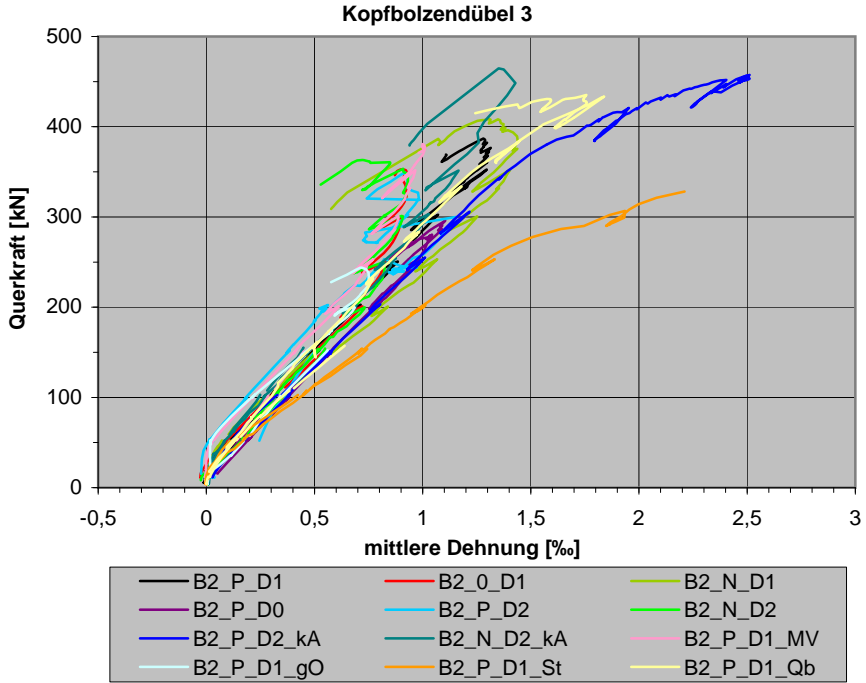


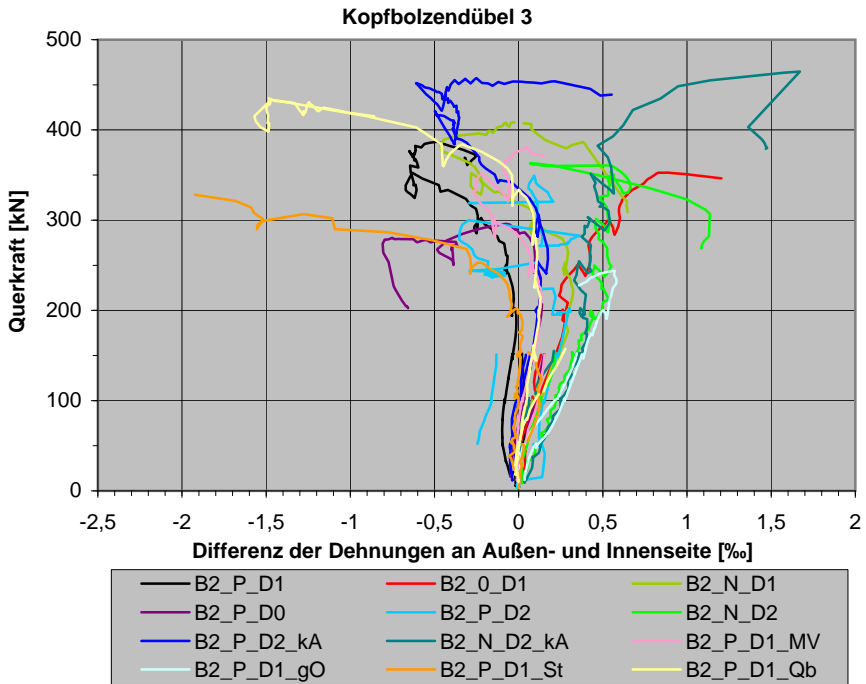
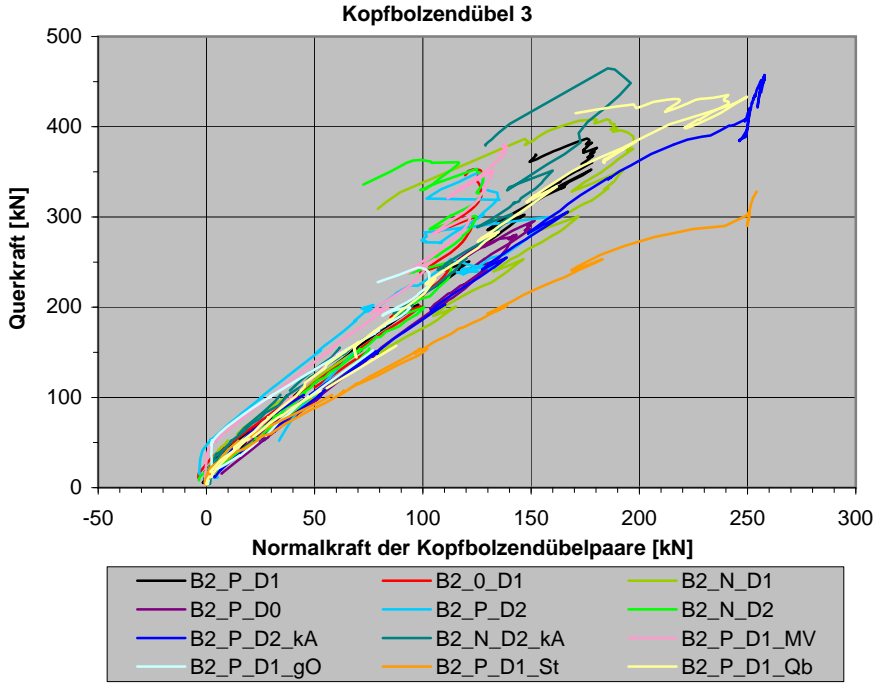


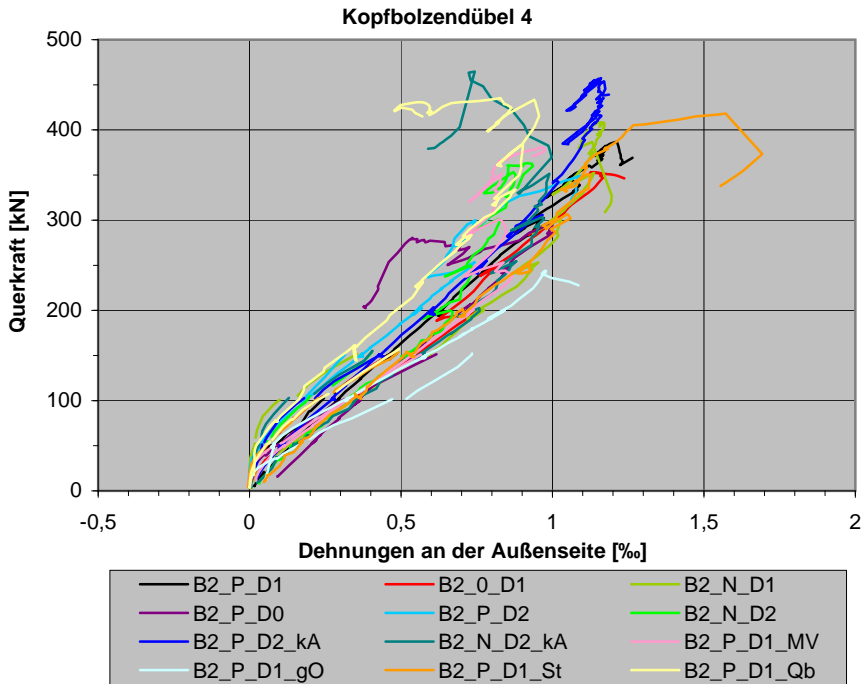
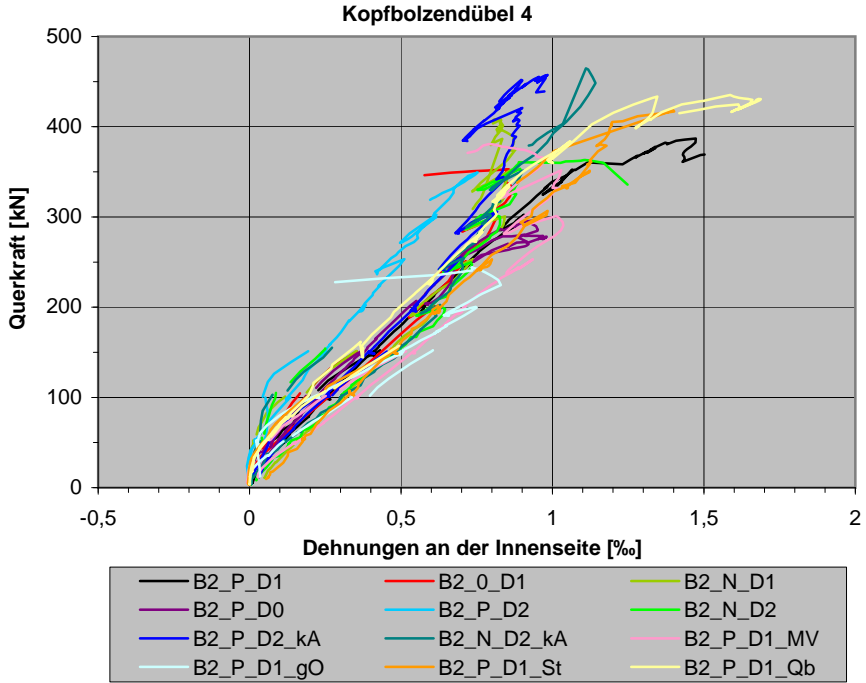


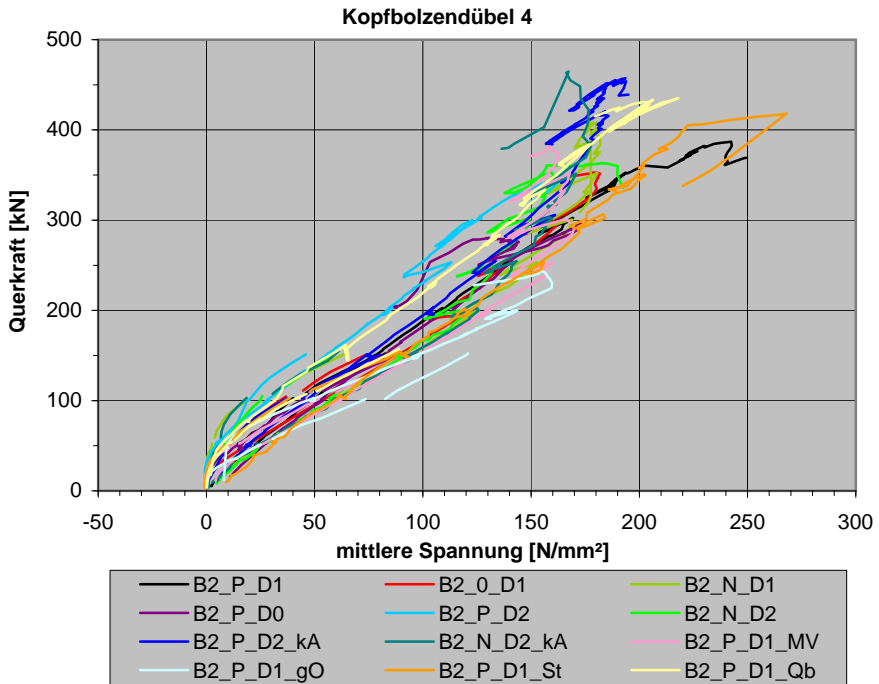
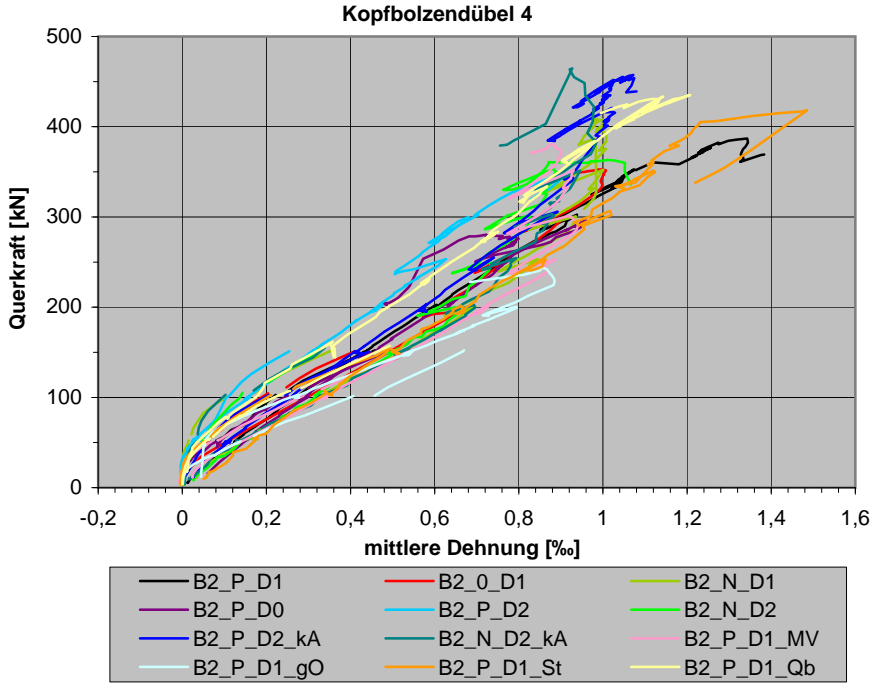


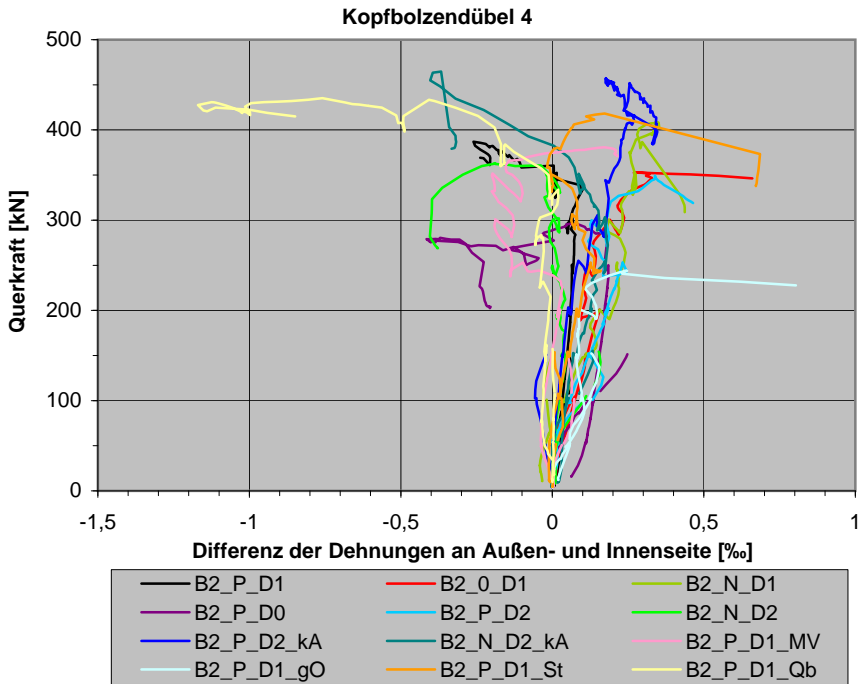
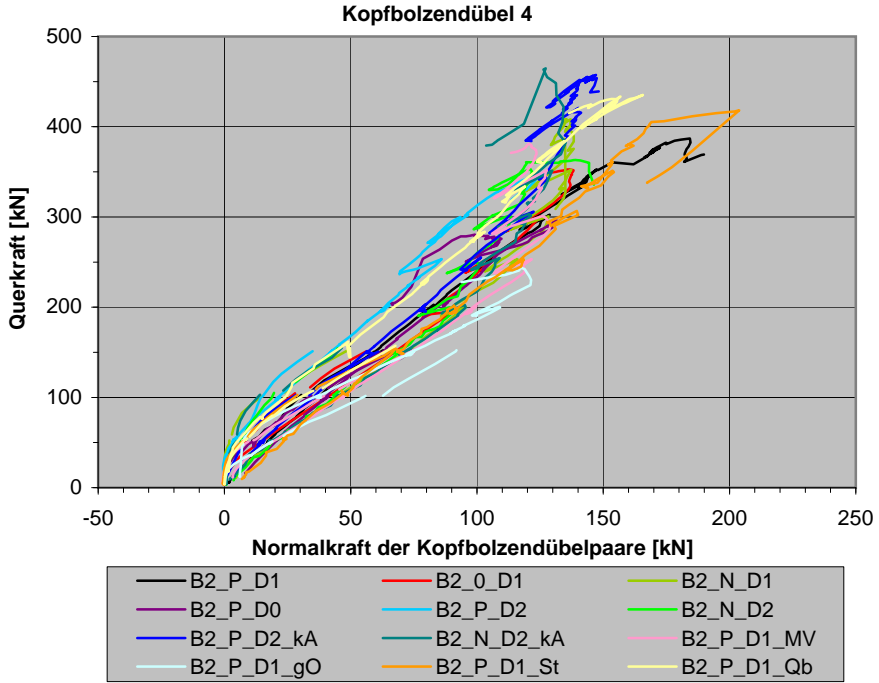




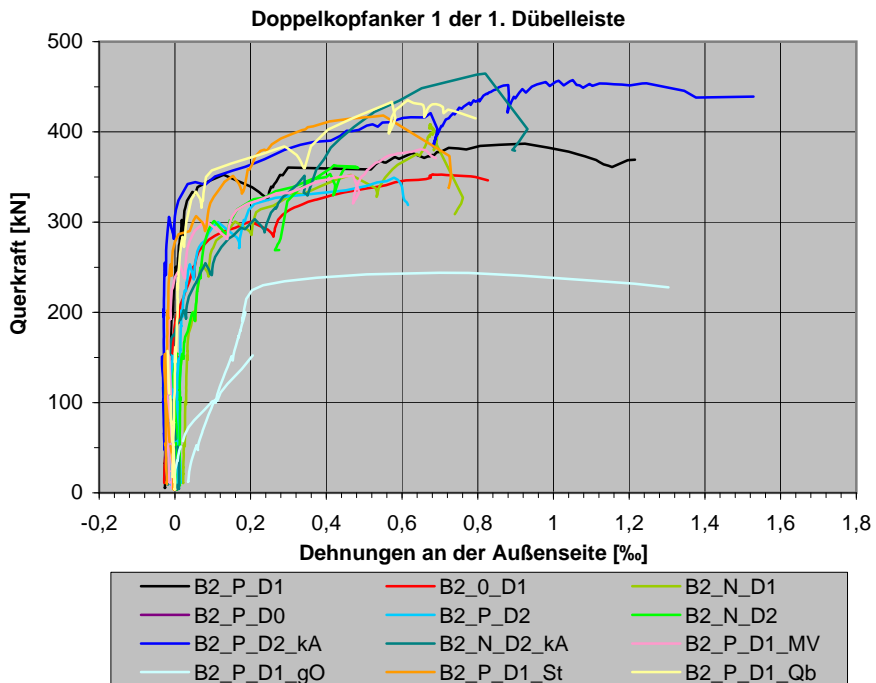
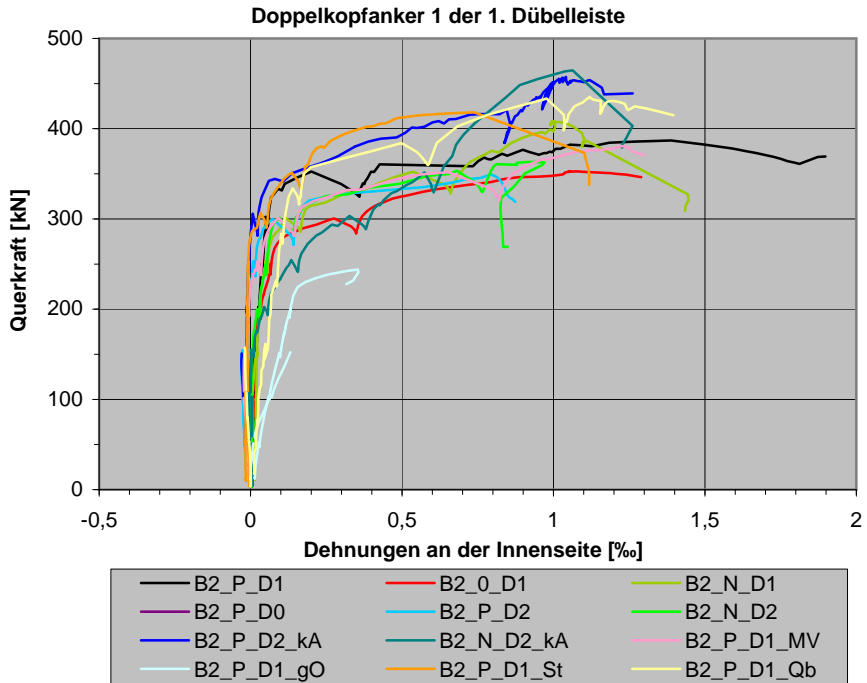


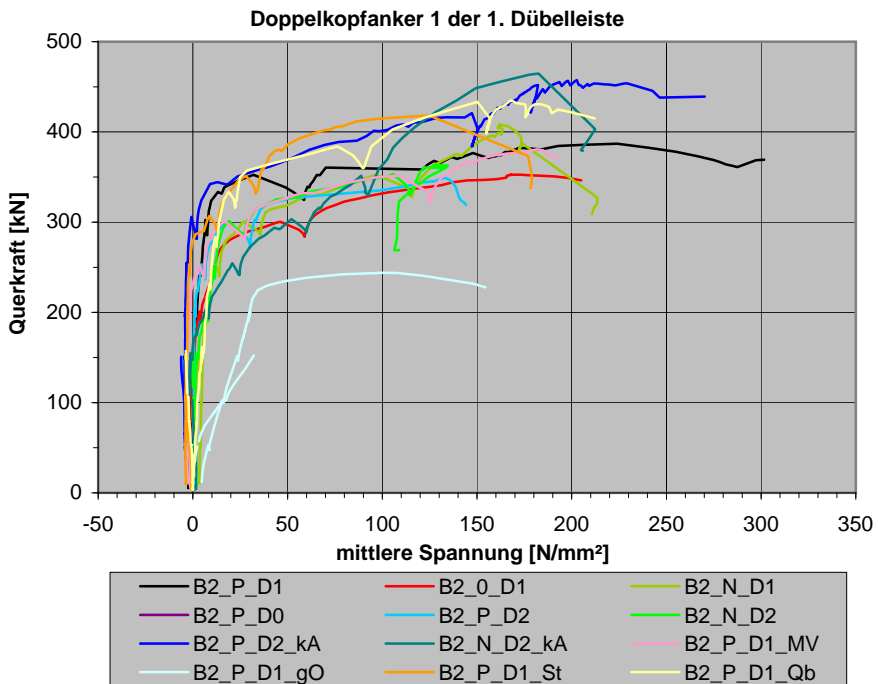
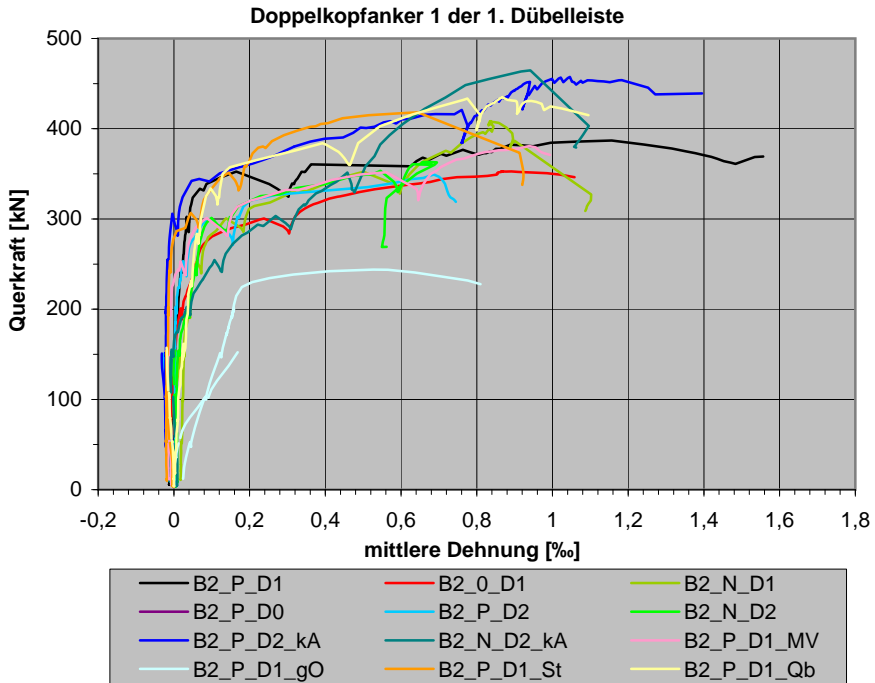


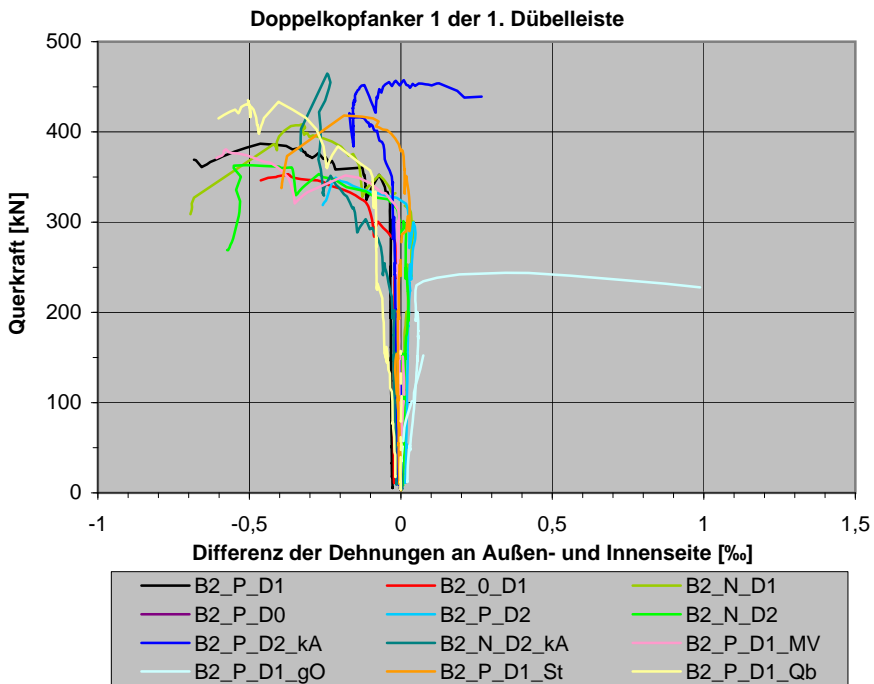
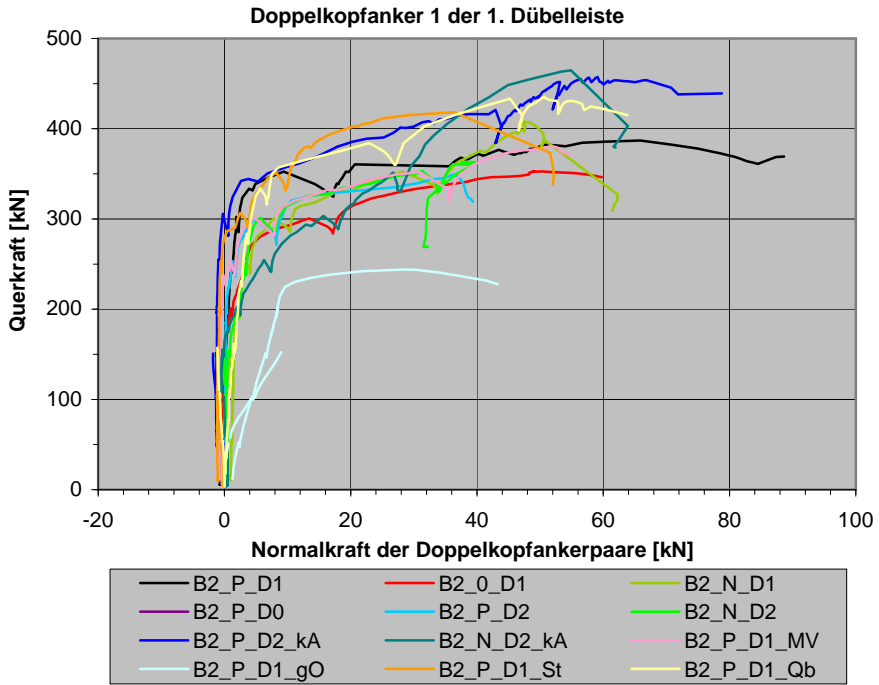


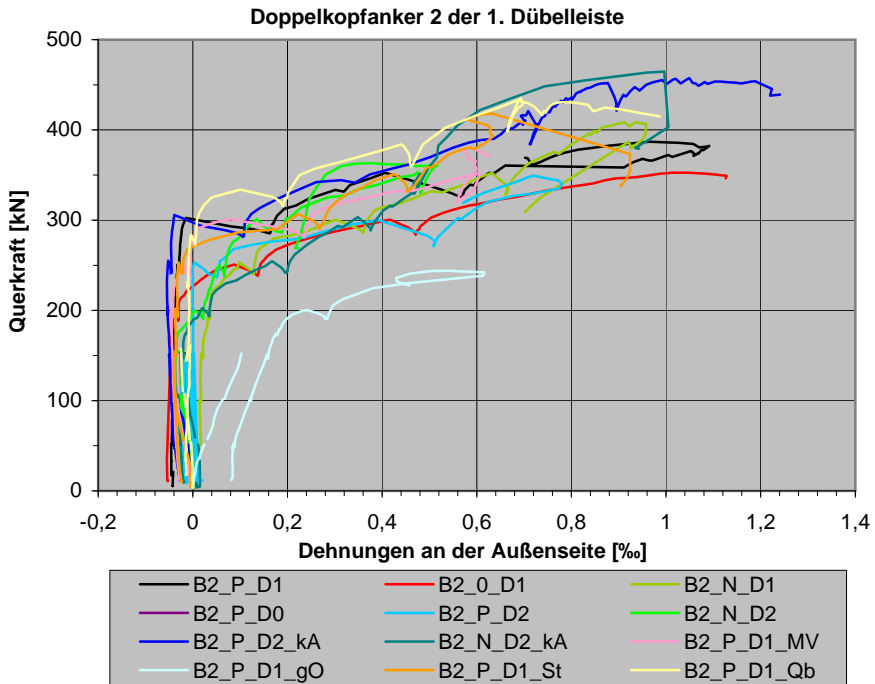
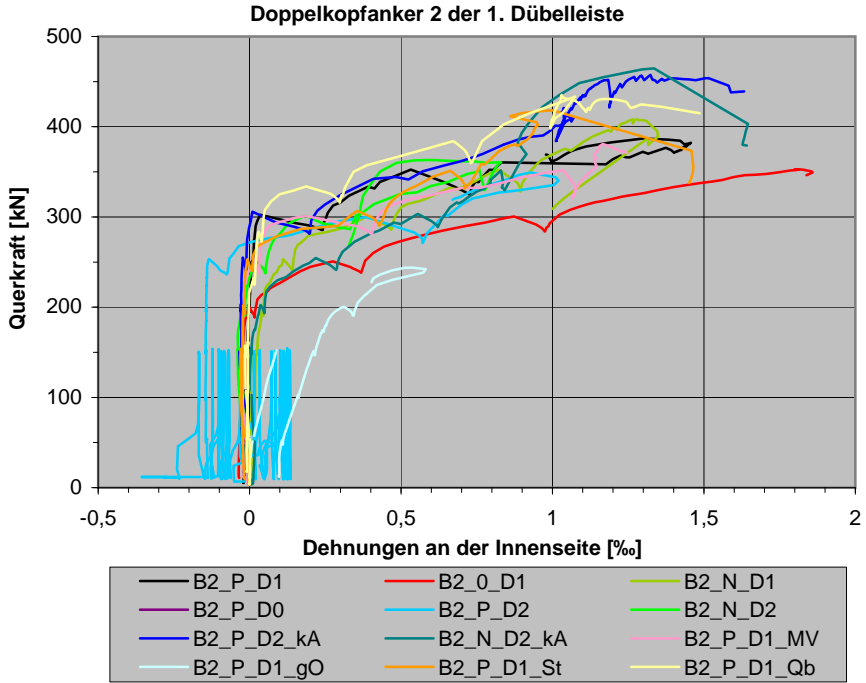


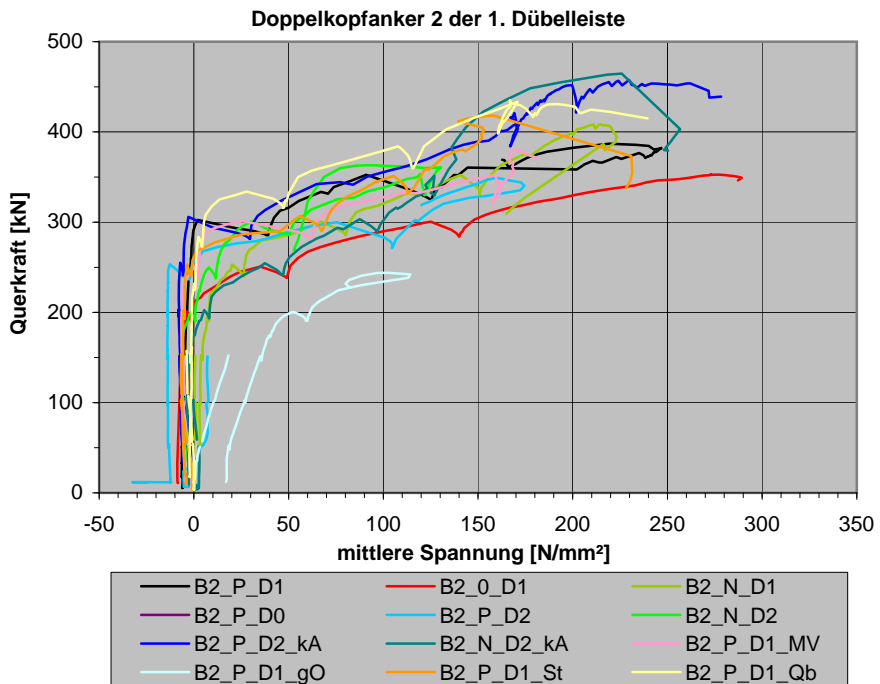
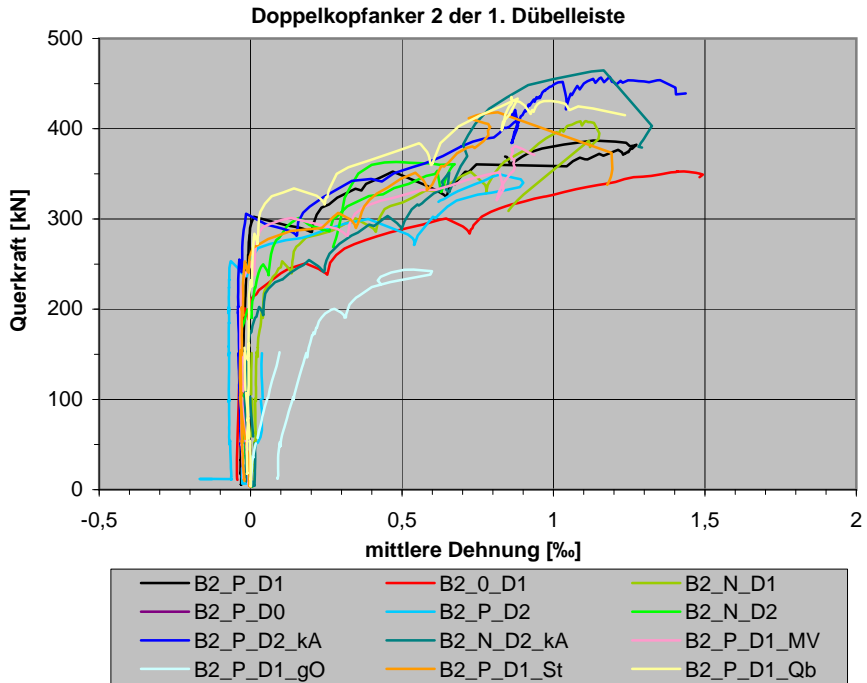
C.2.4. Doppelkopfkanker der ersten Dübelleiste

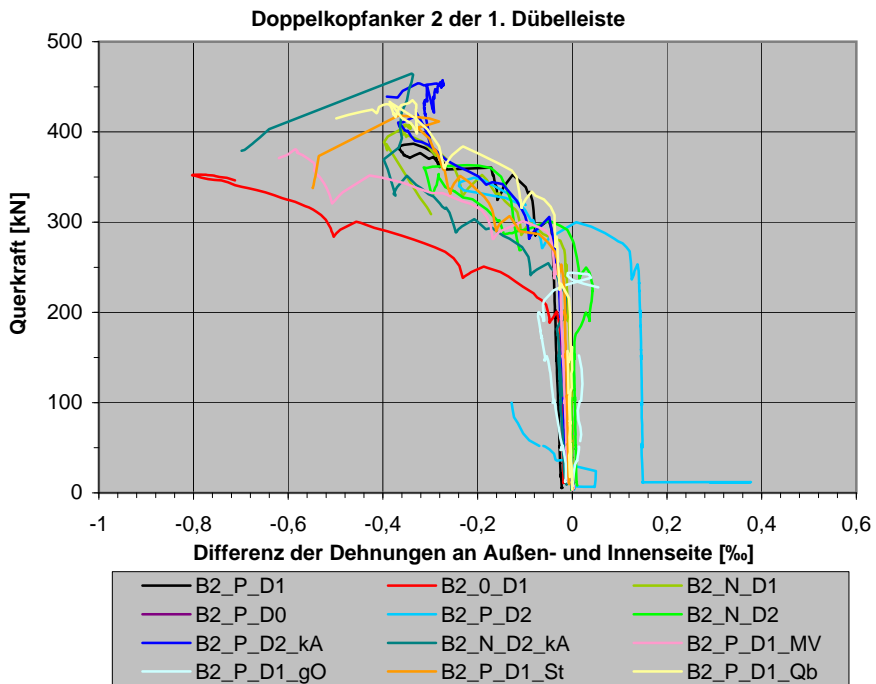
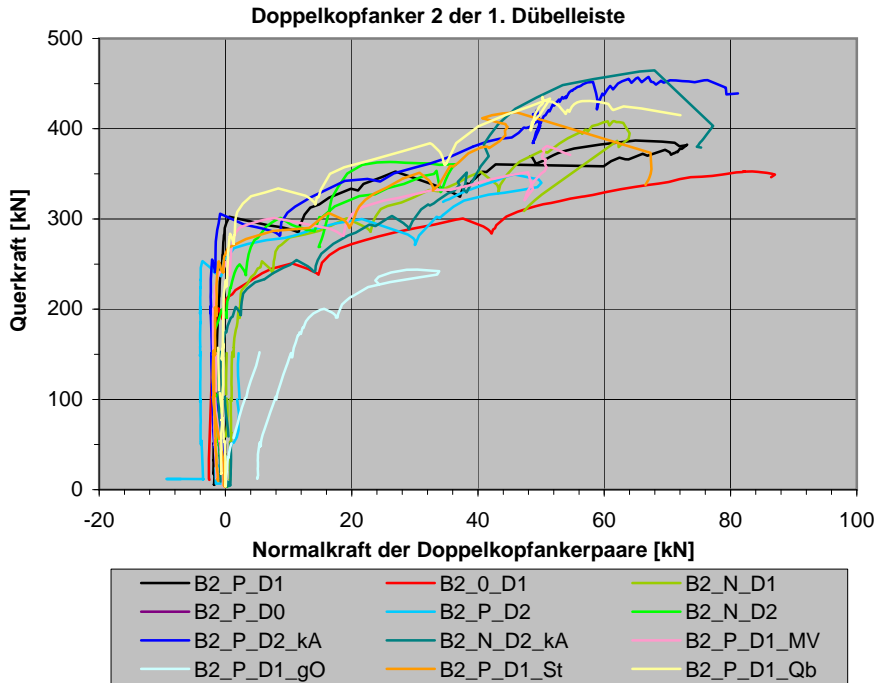


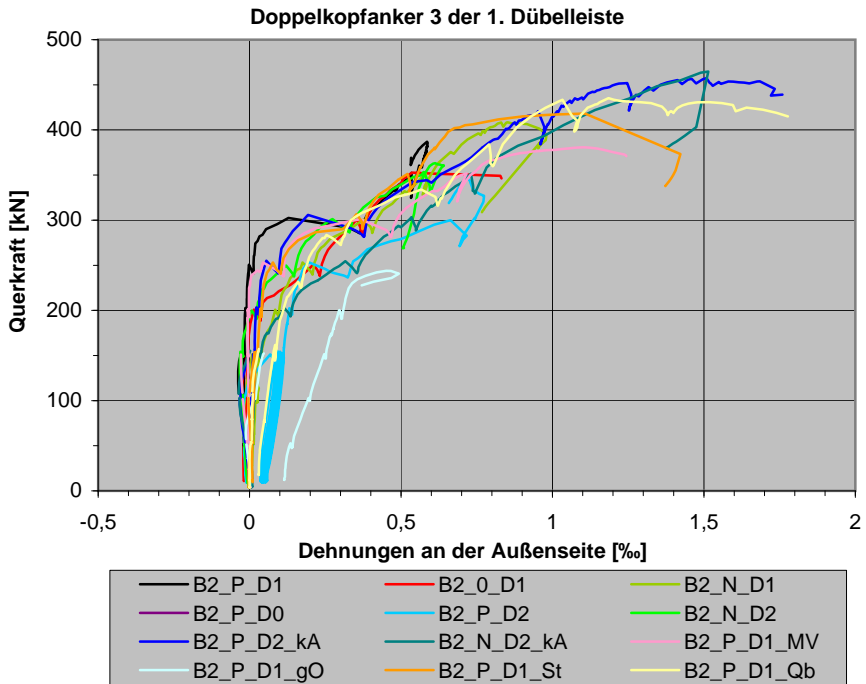
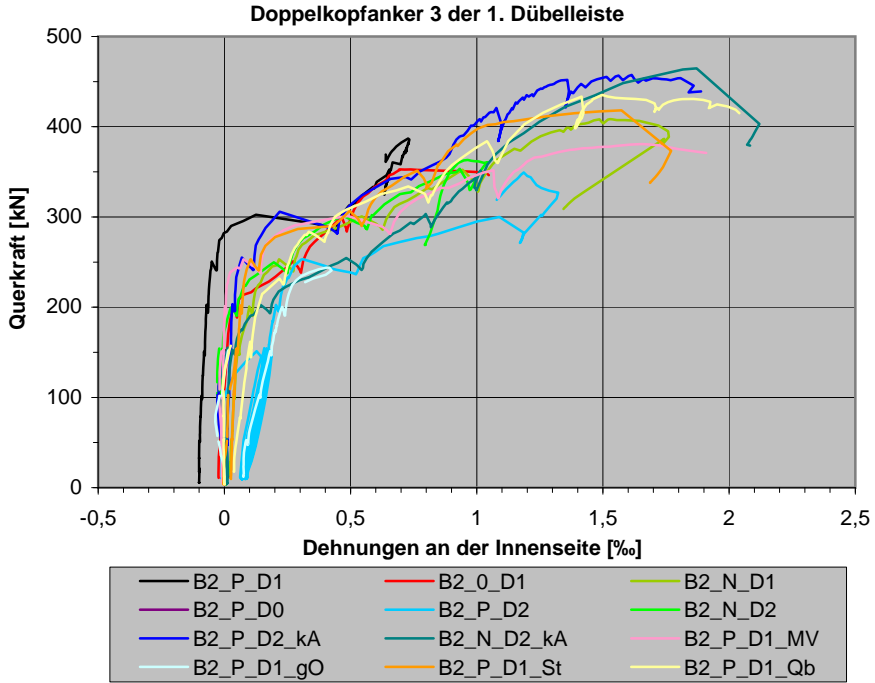


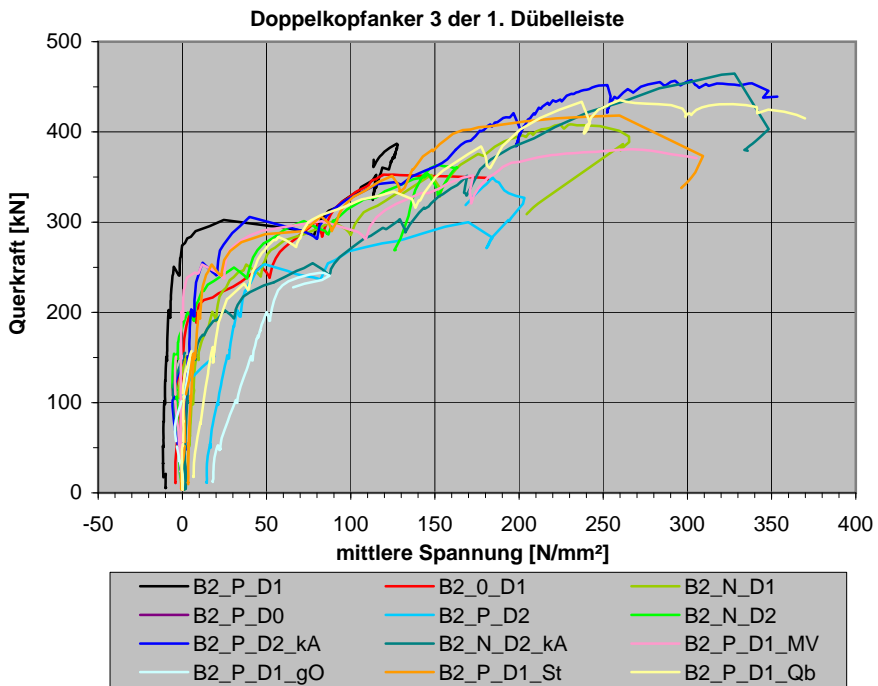
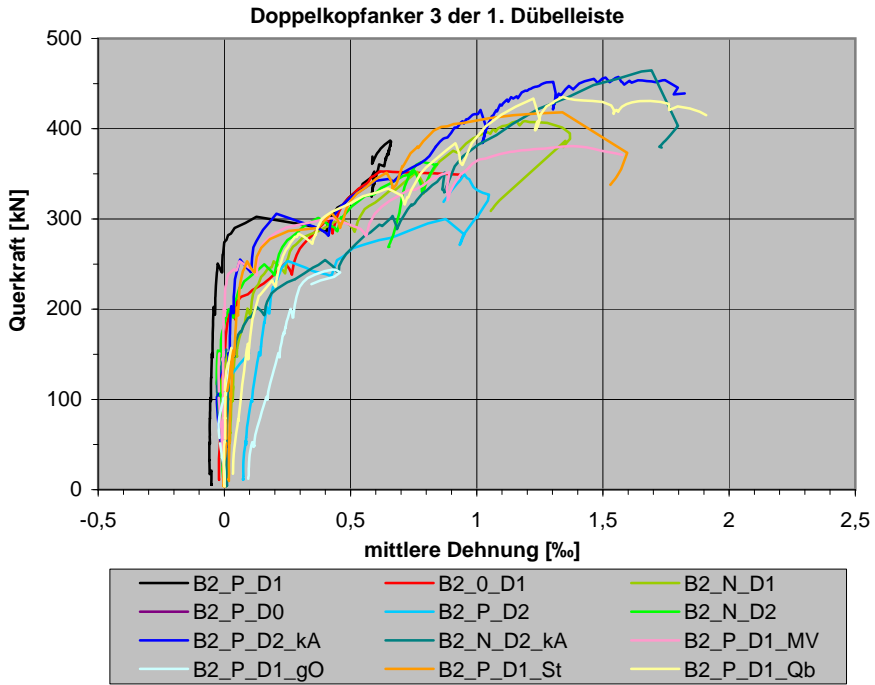


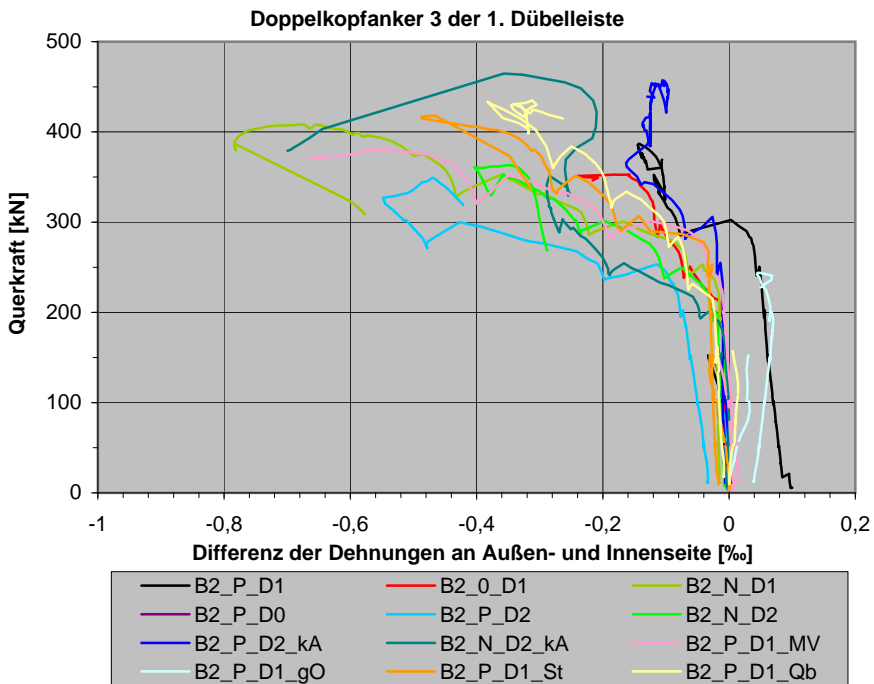
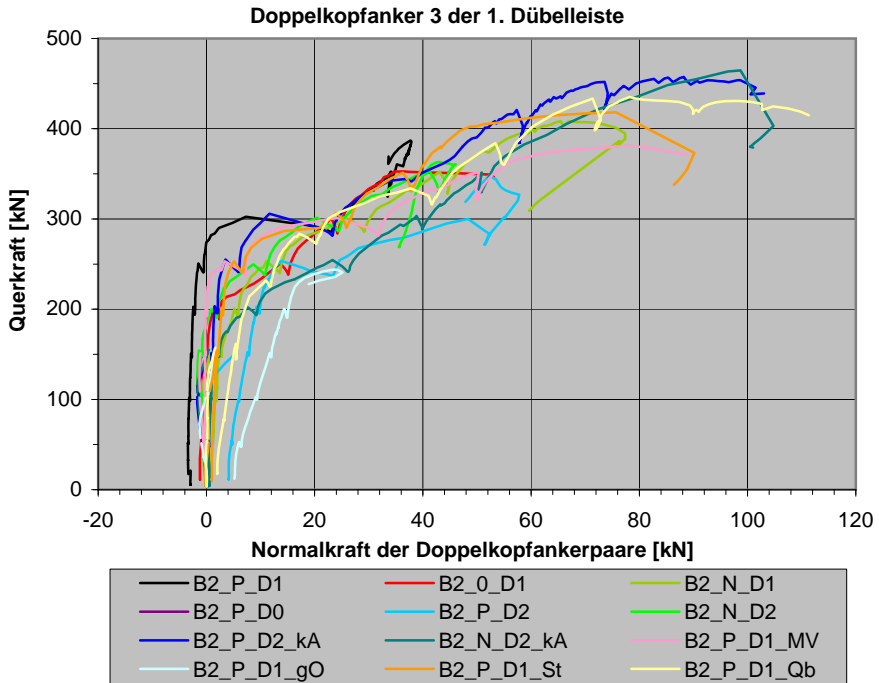


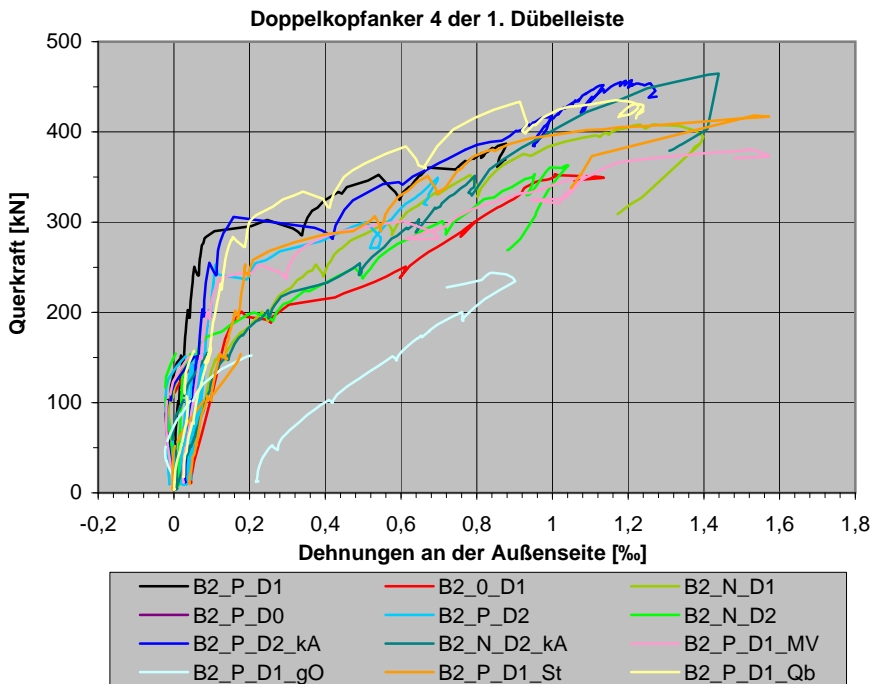
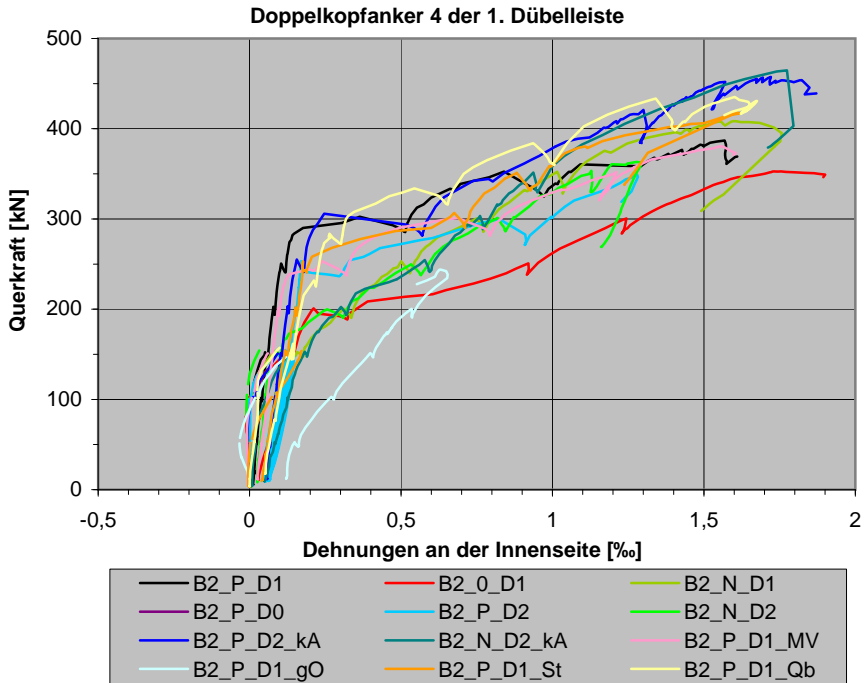


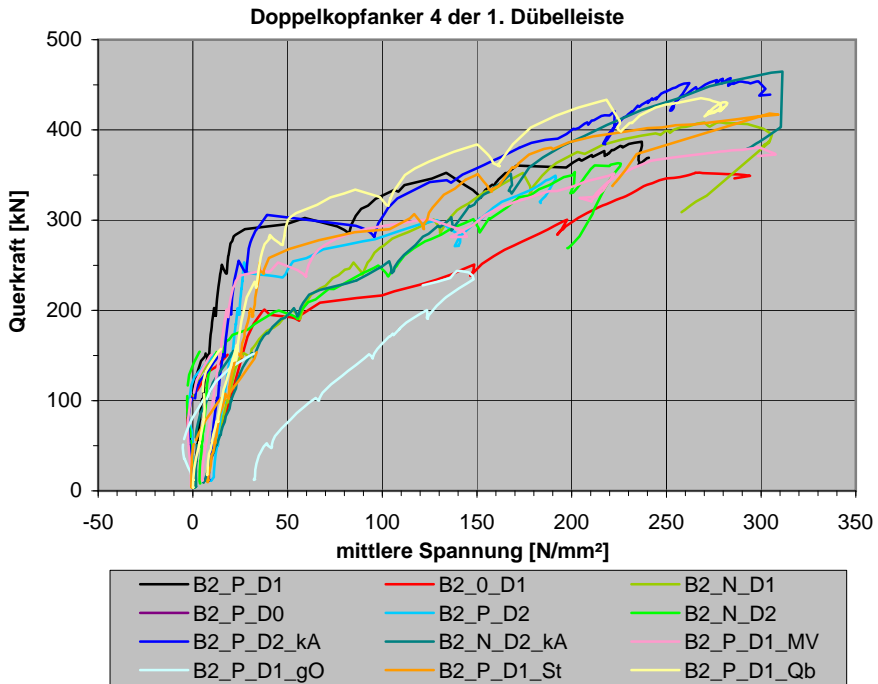
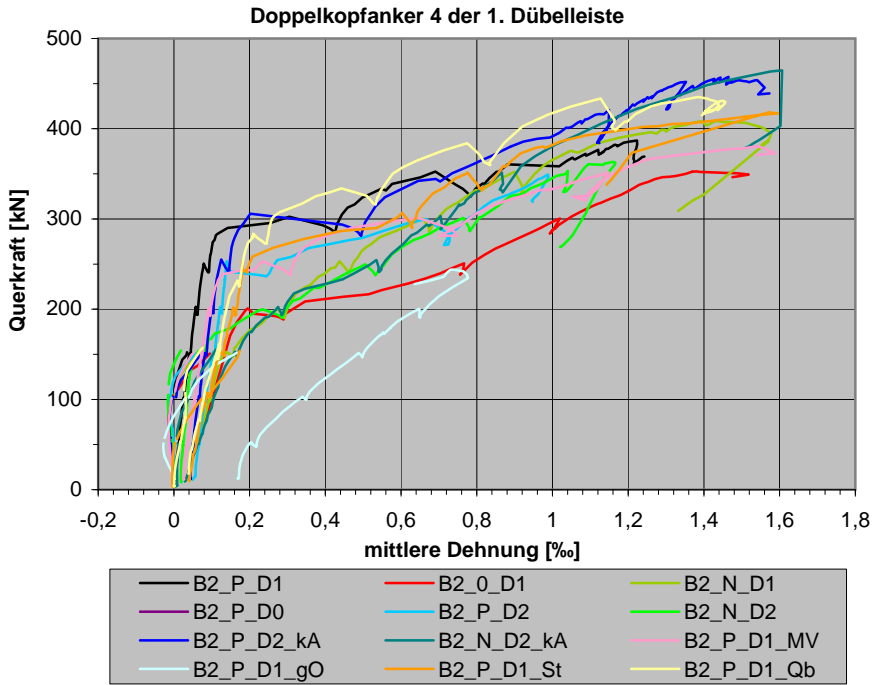


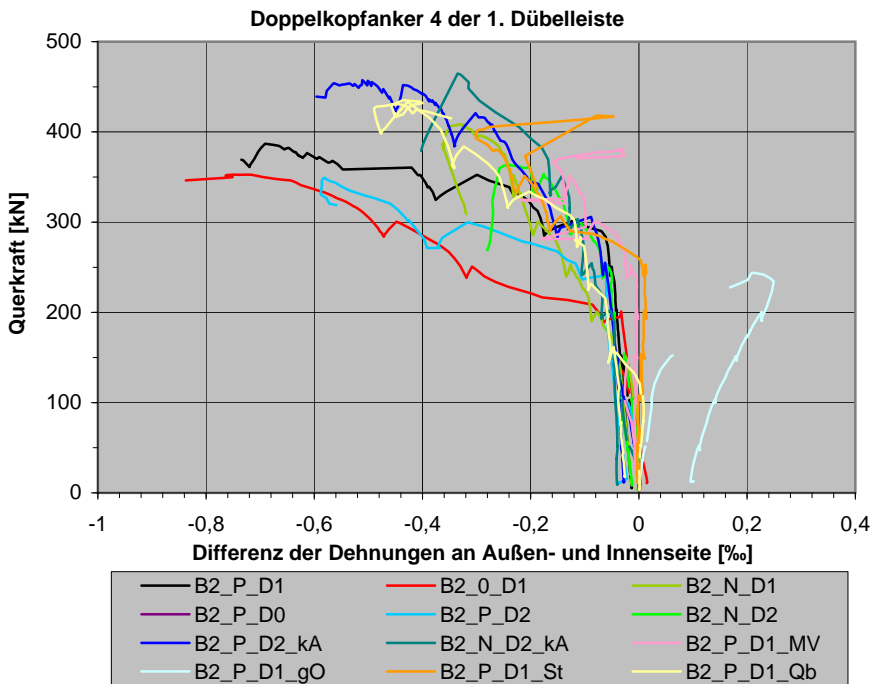
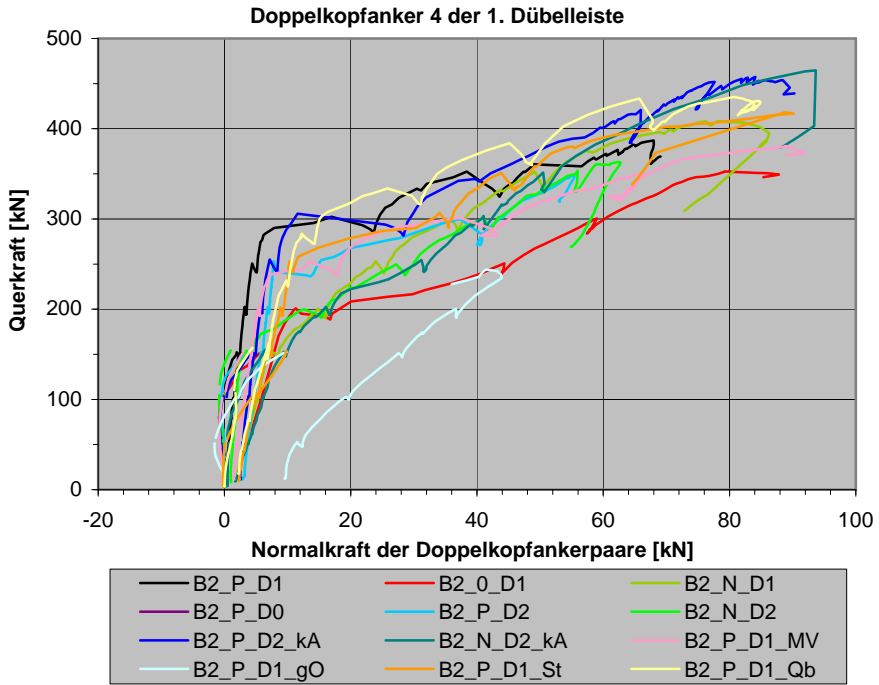




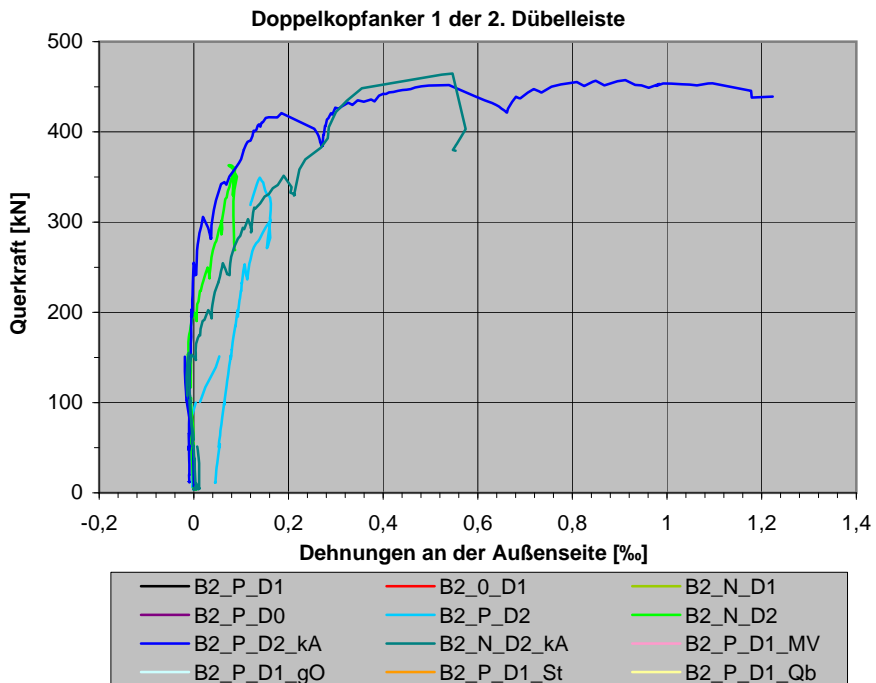
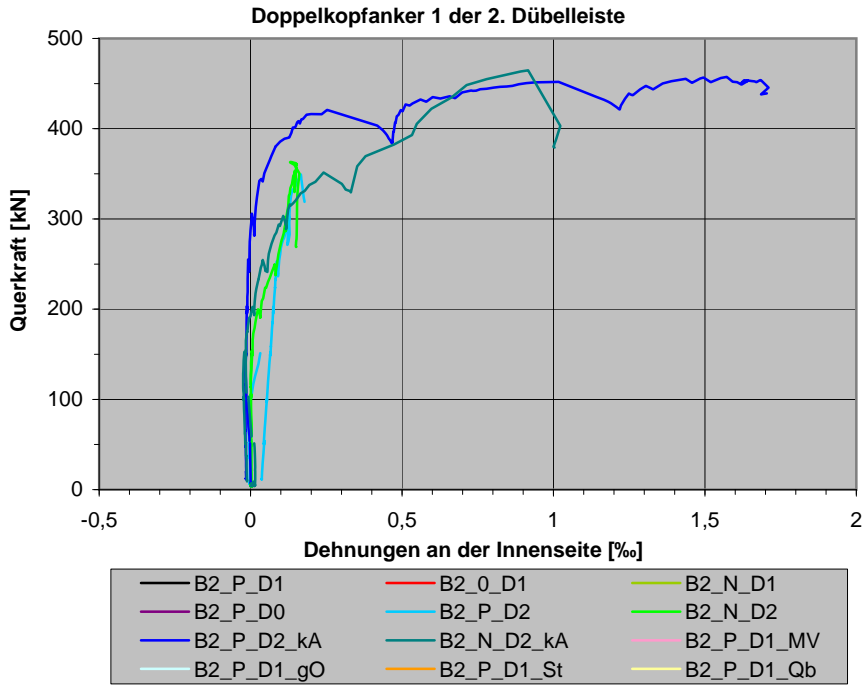


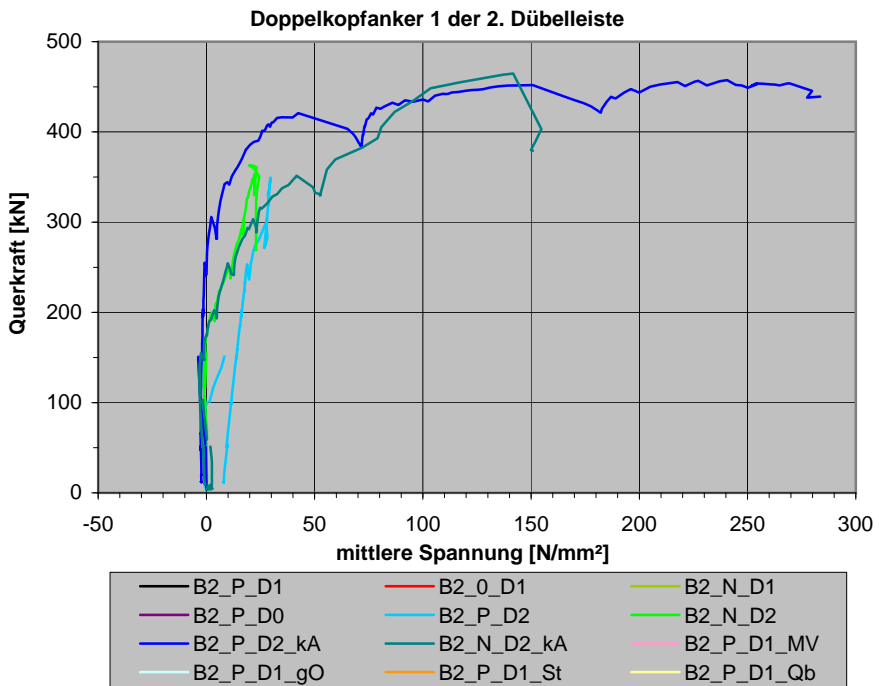
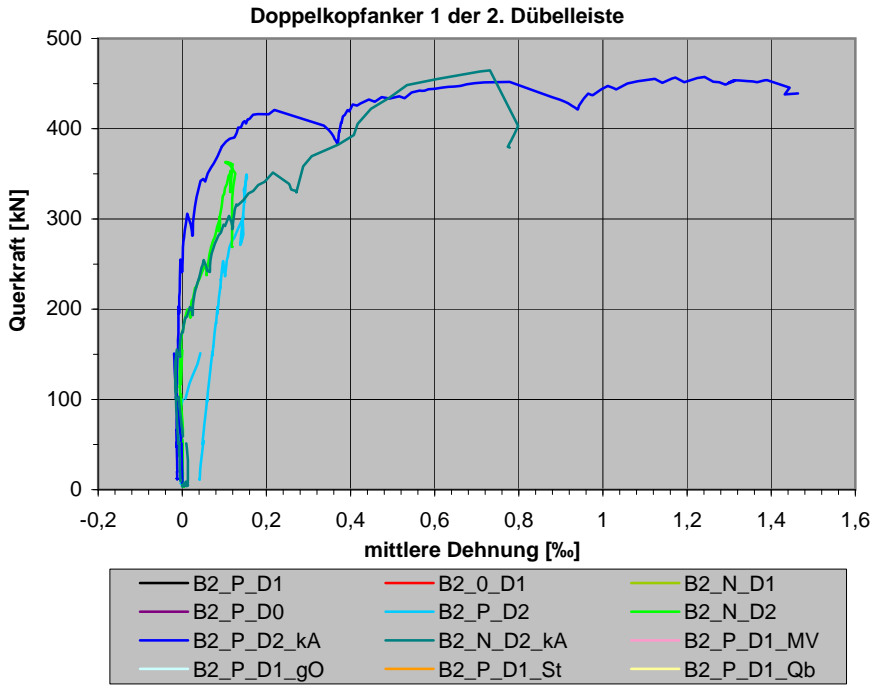


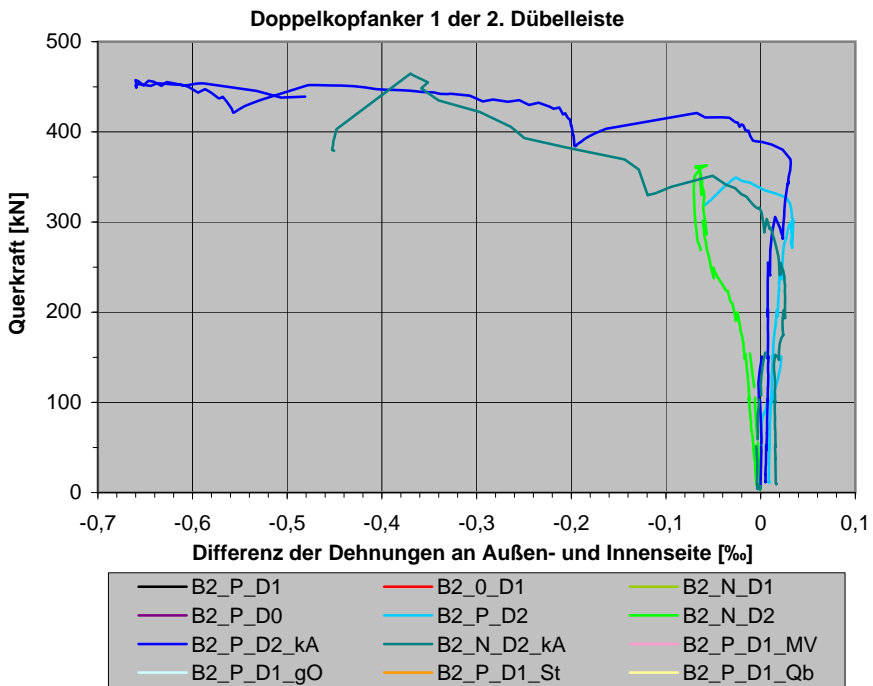
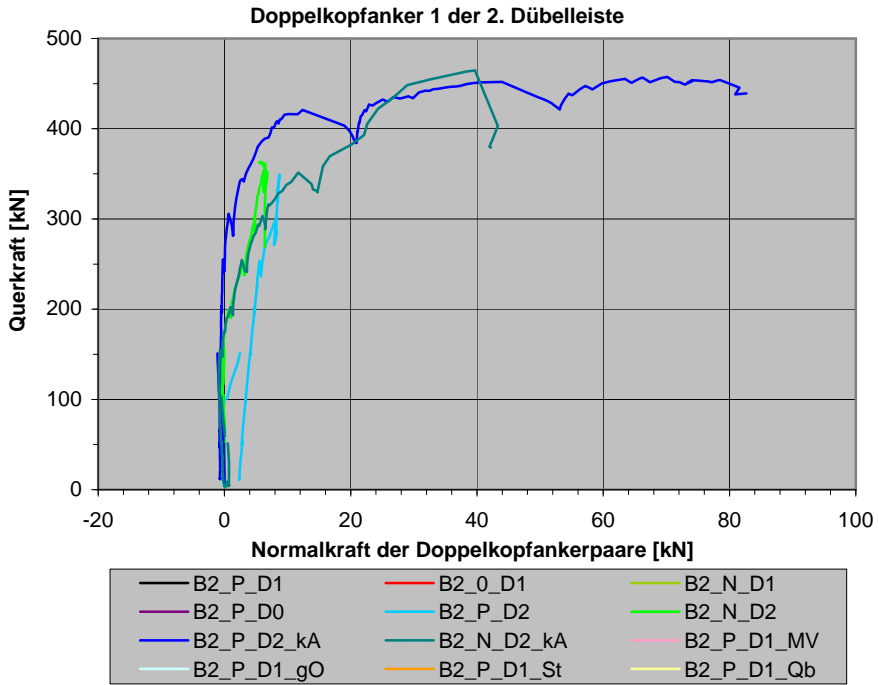


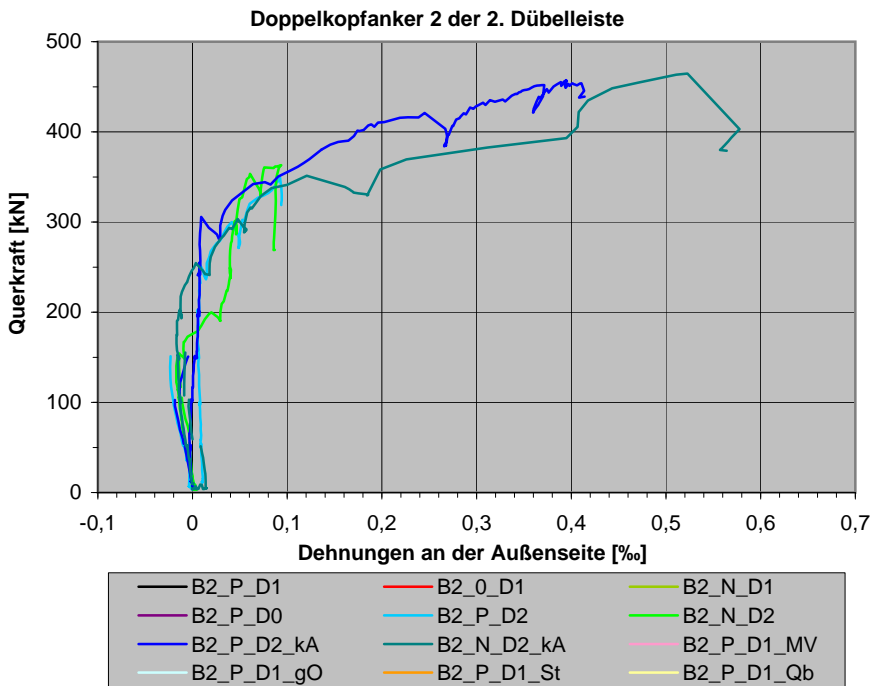
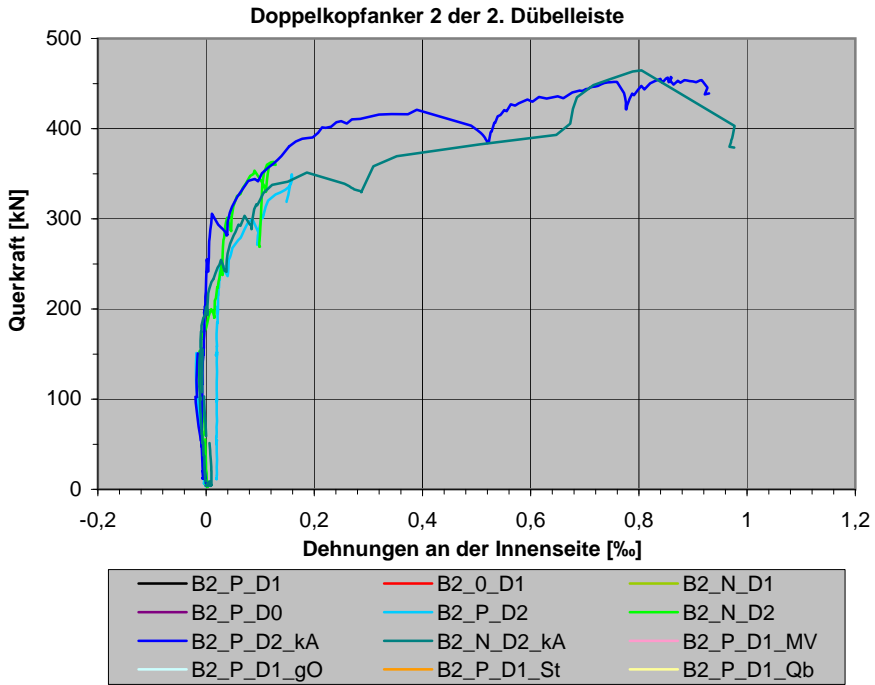


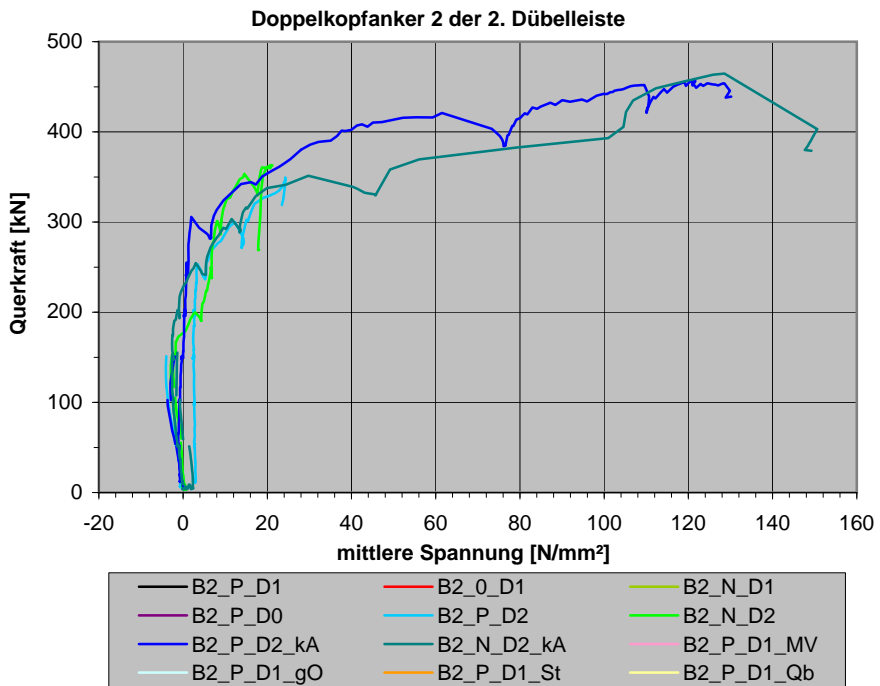
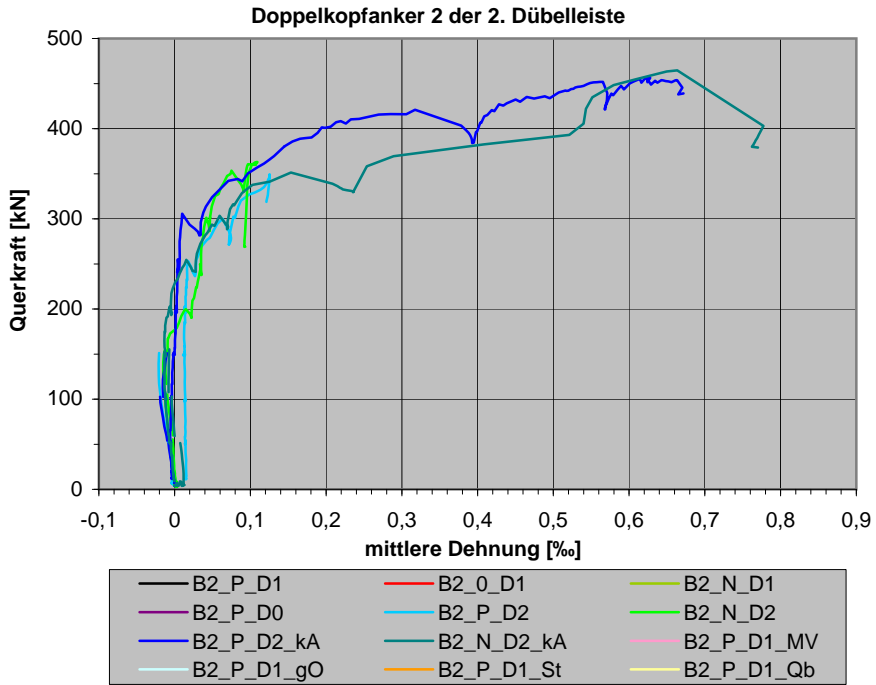
C.2.5. Doppelkopfkanker der zweiten Dübelleiste

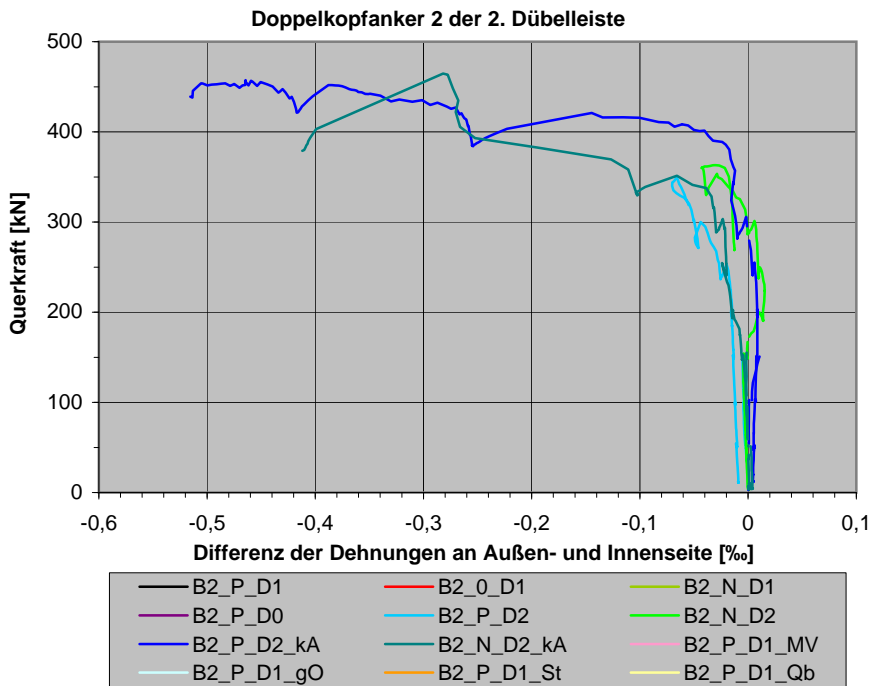
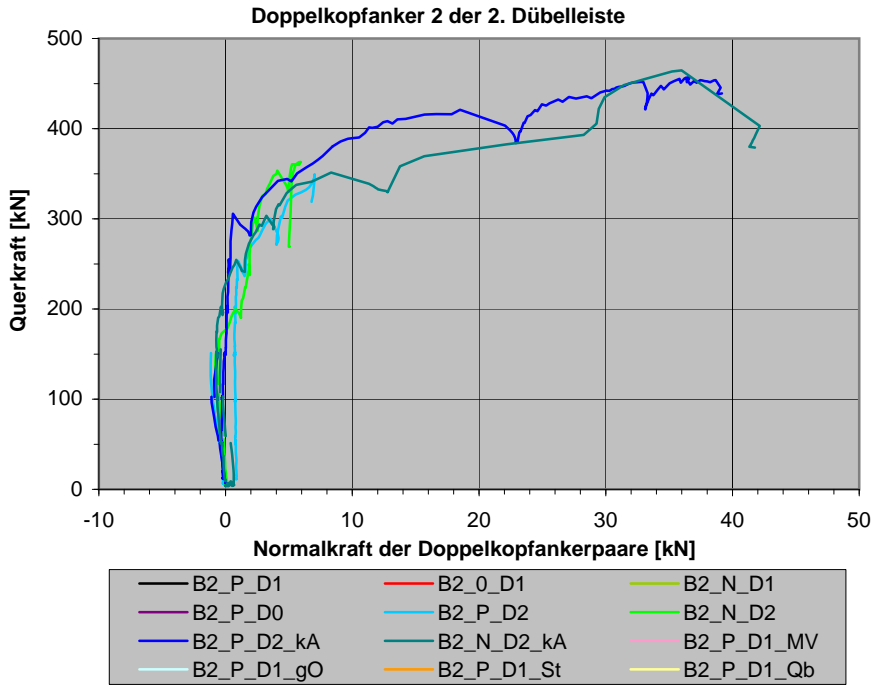


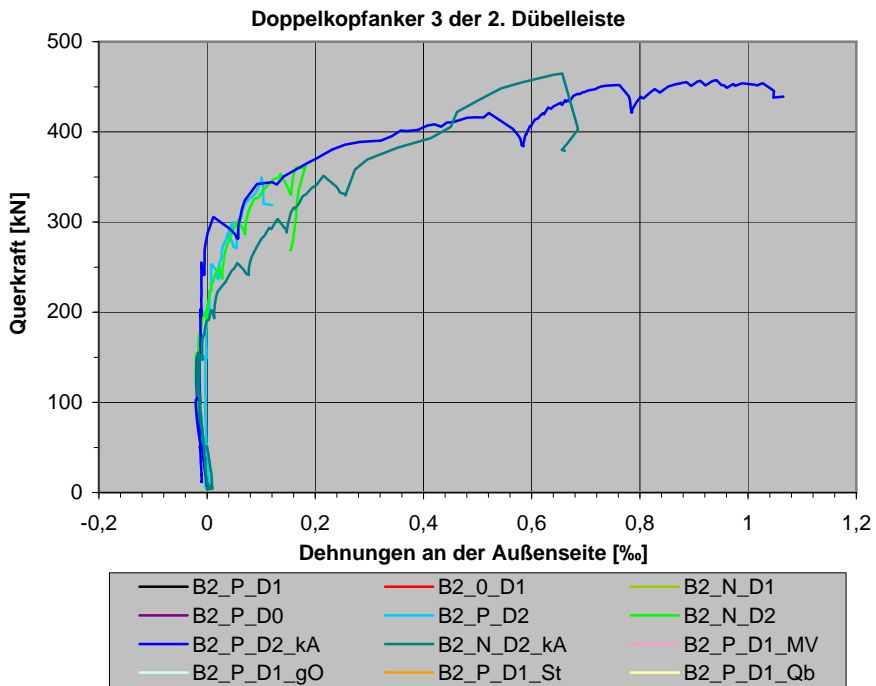
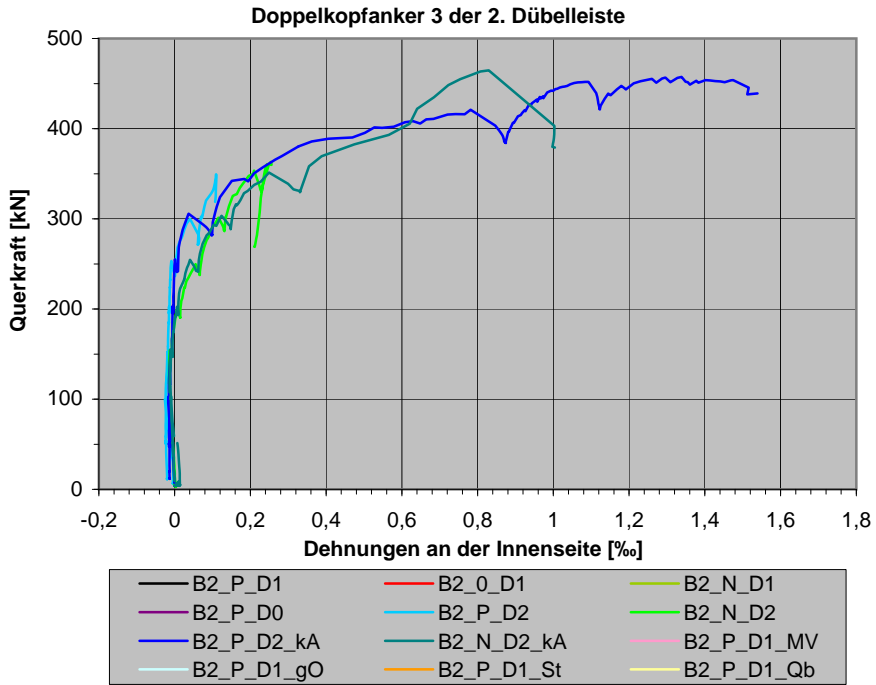


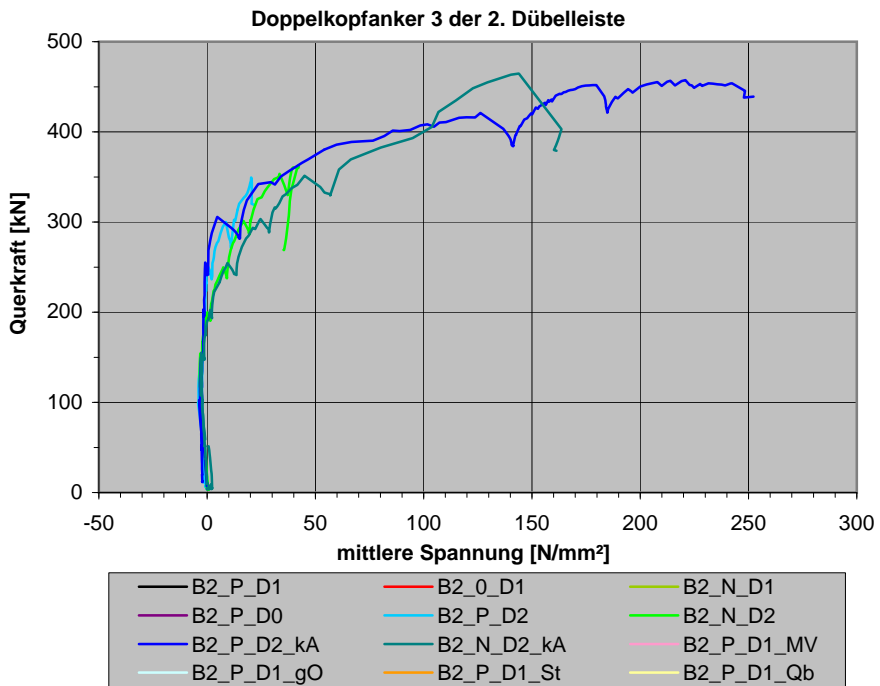
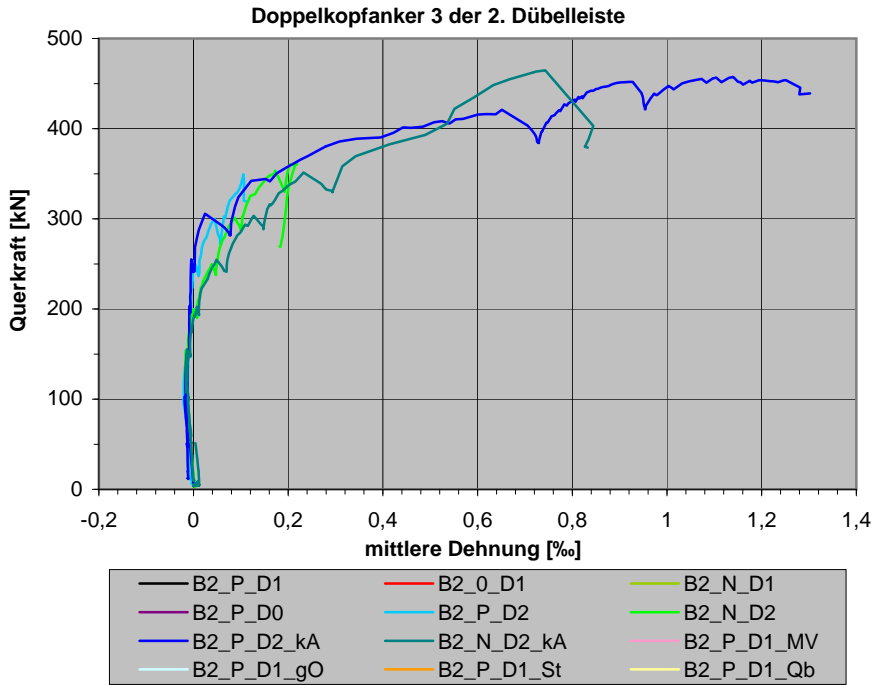


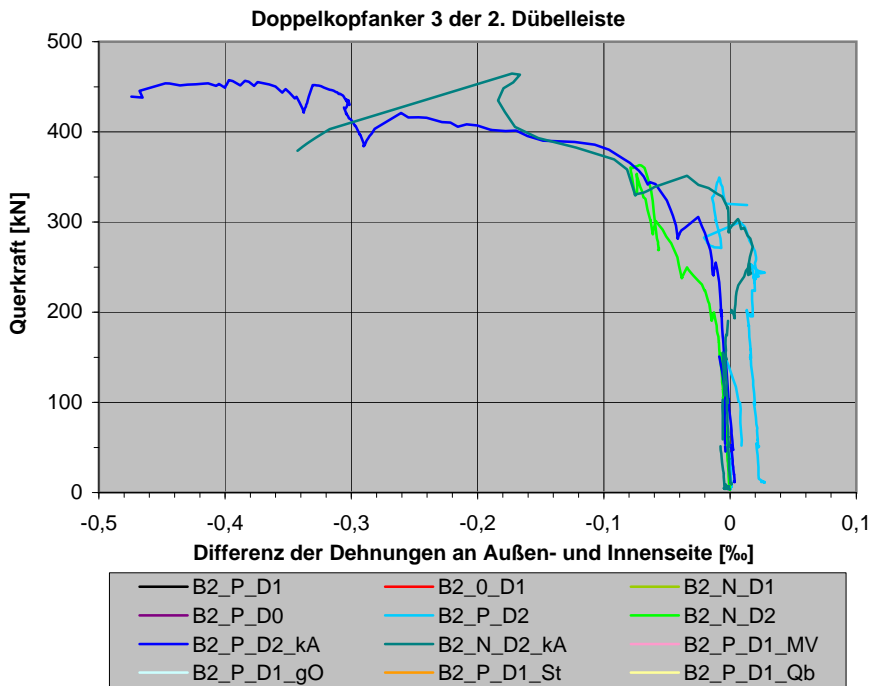
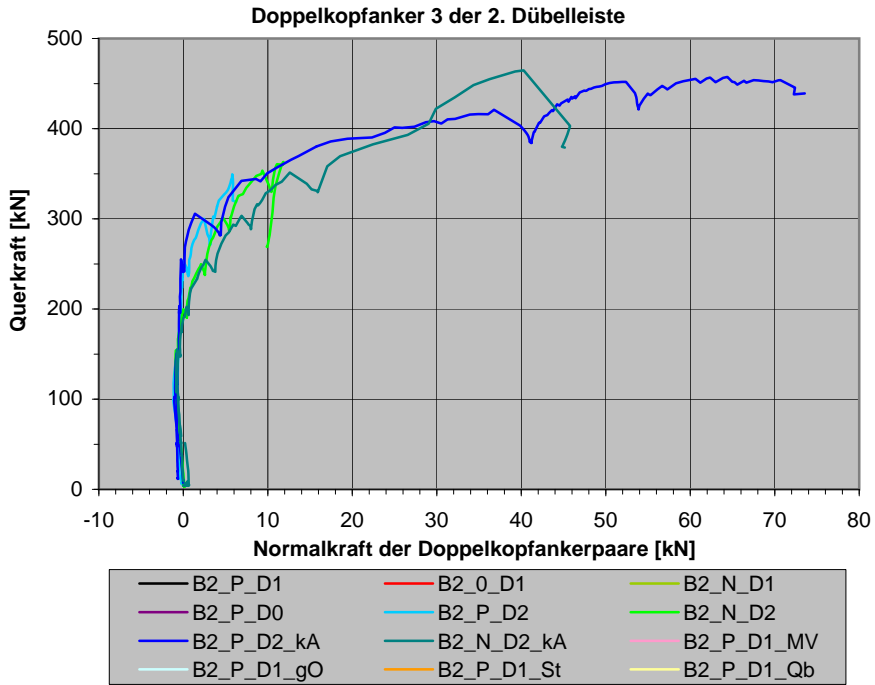


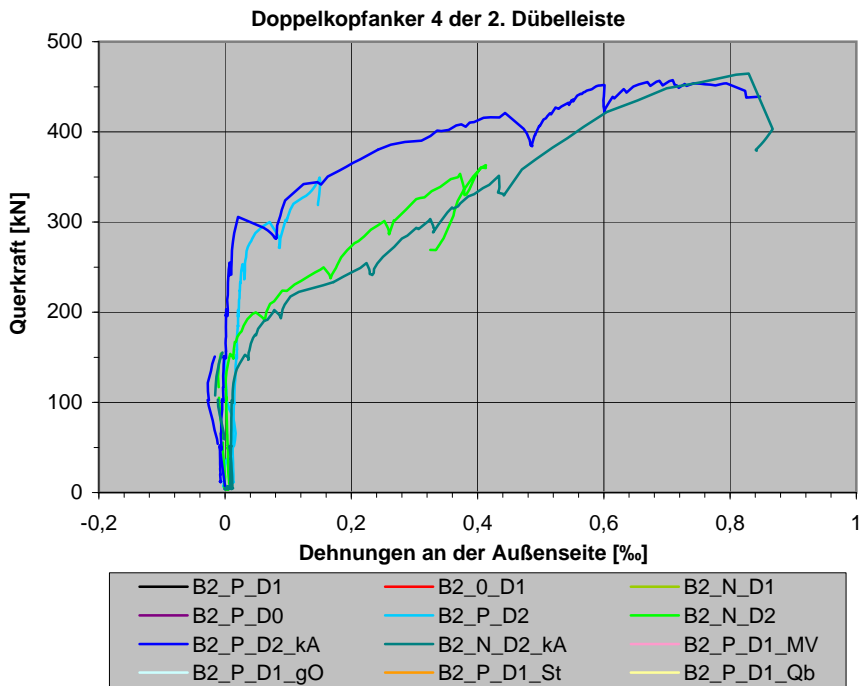
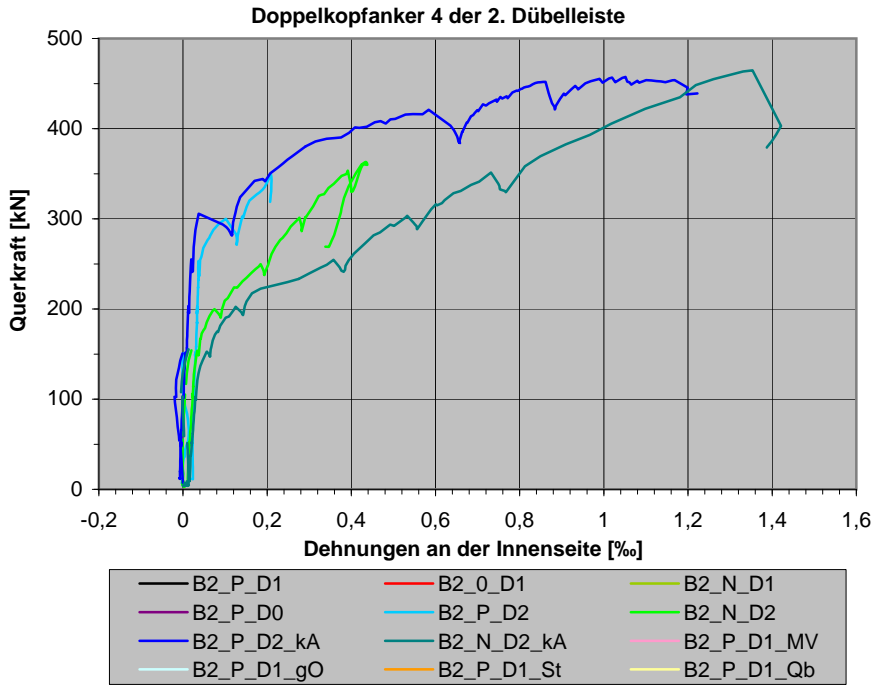


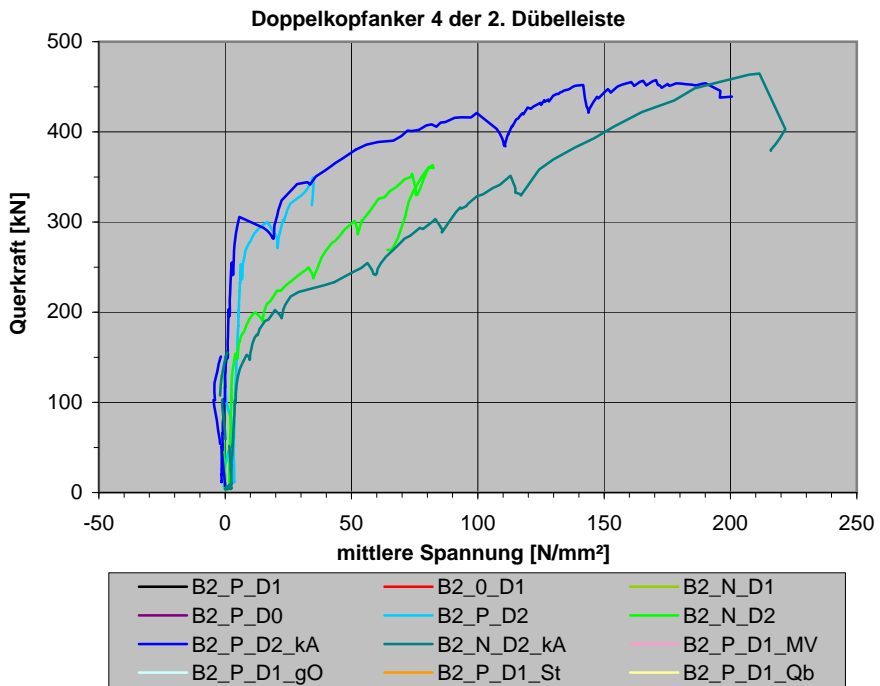
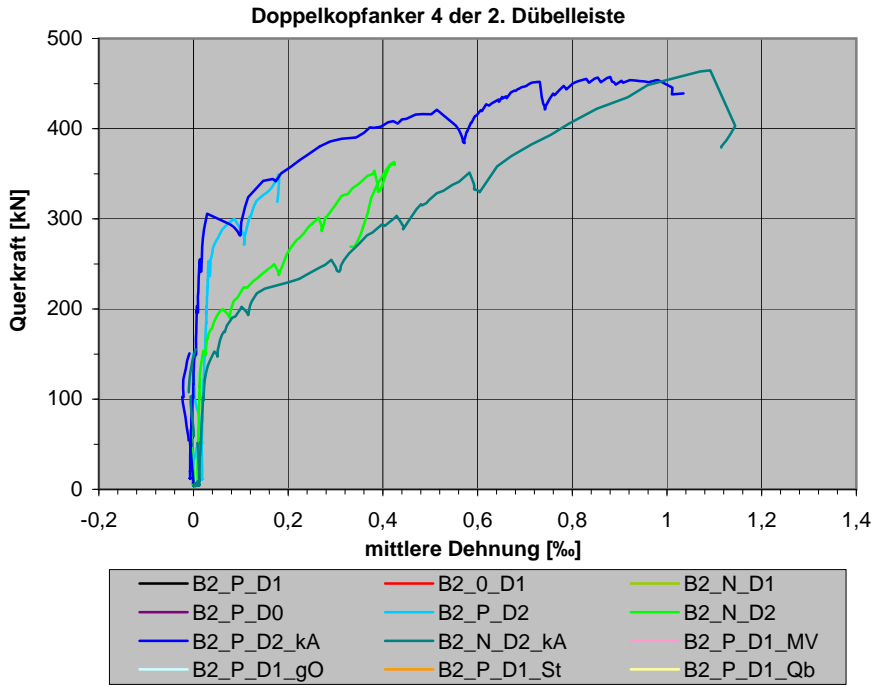


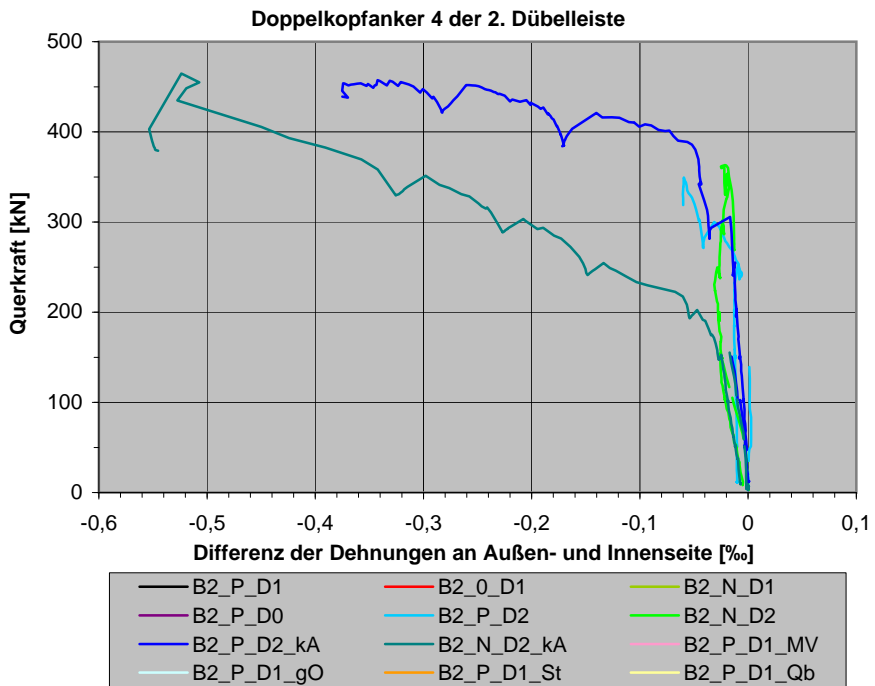
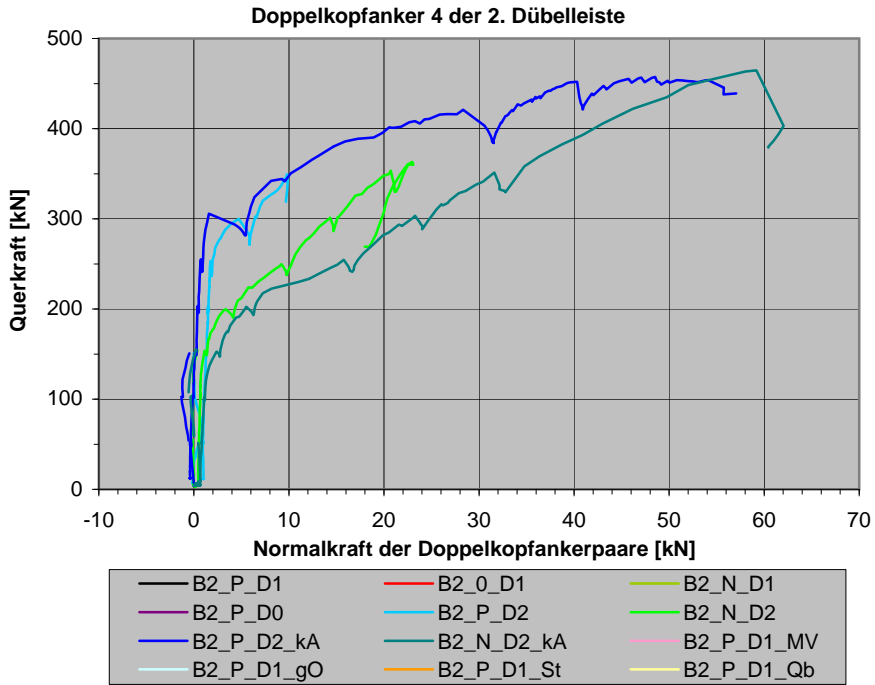




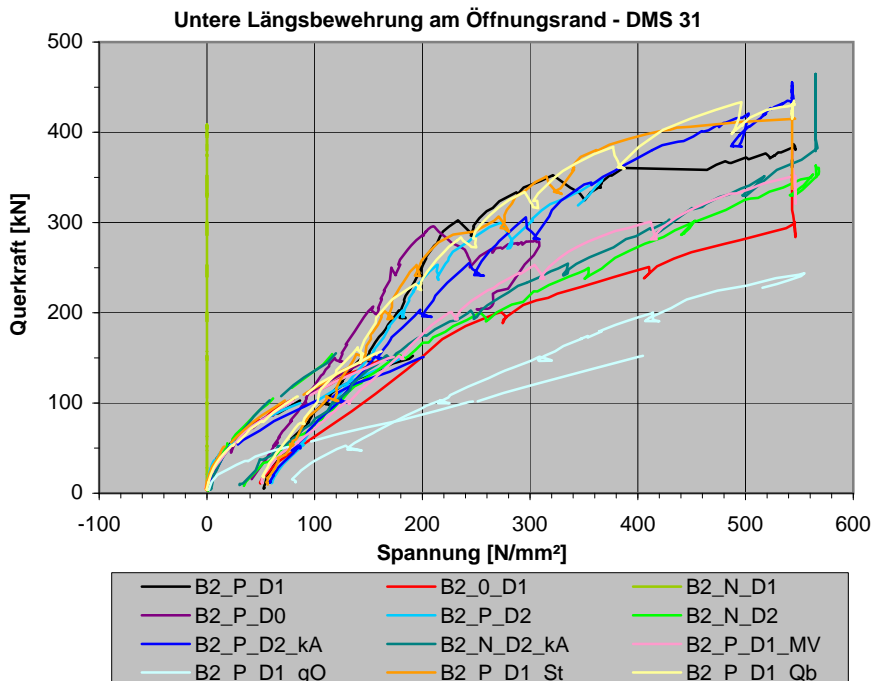
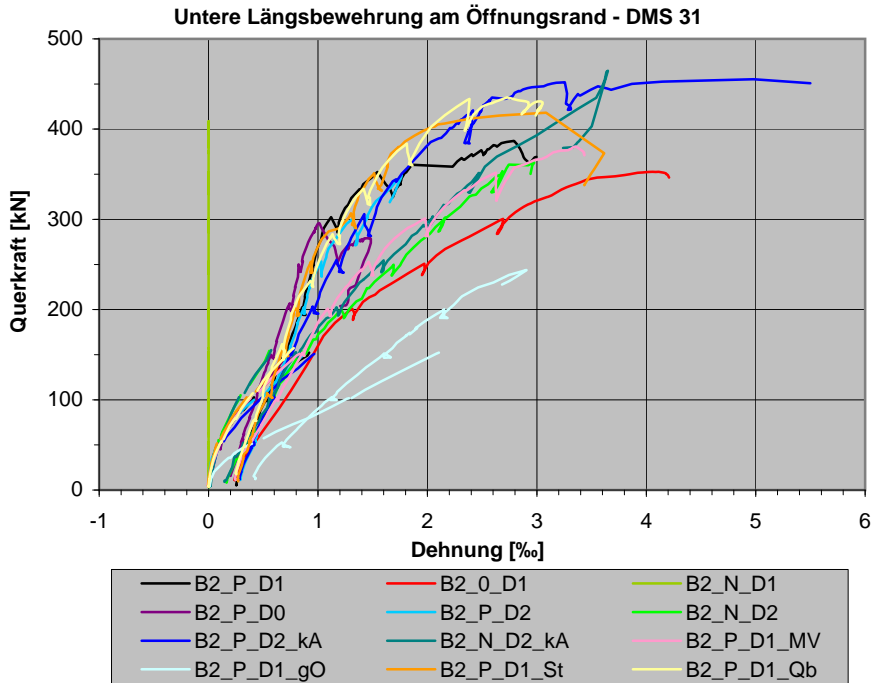


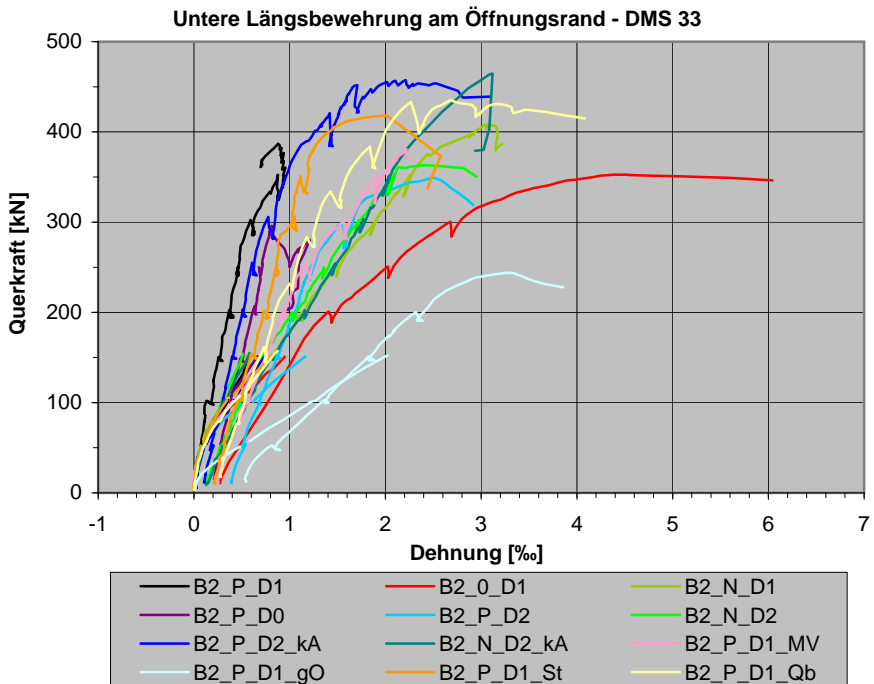
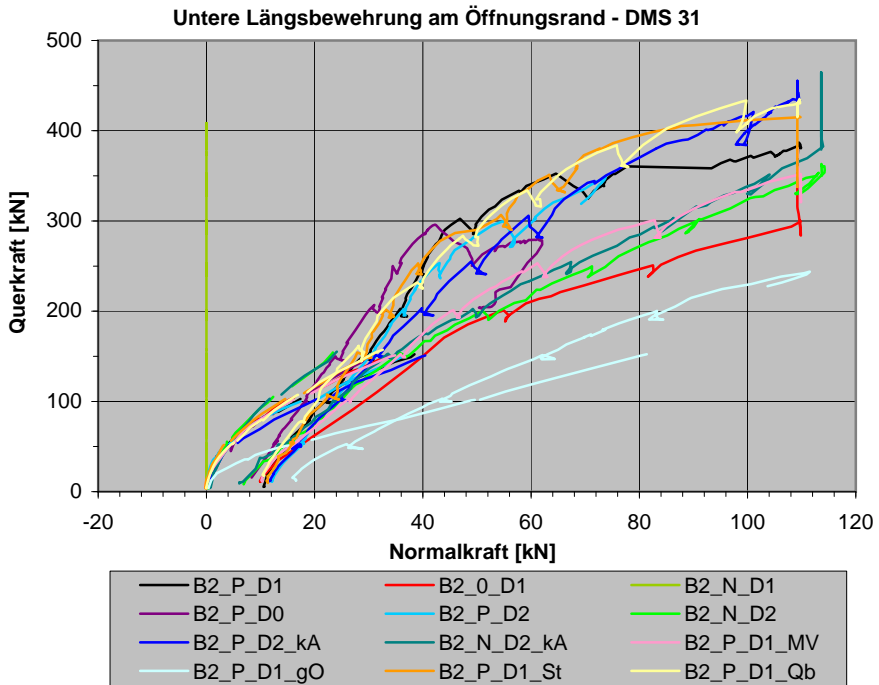


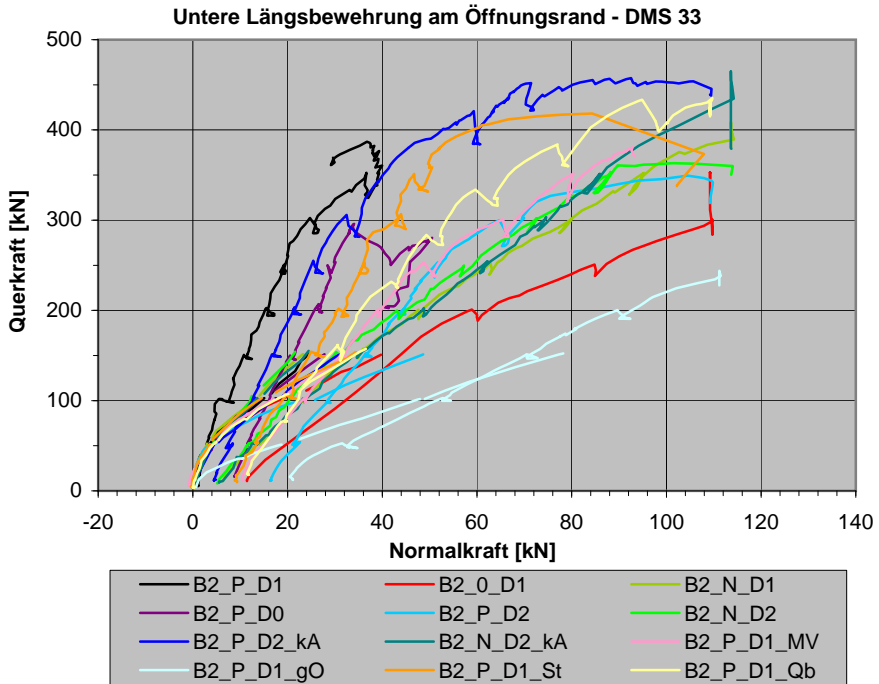
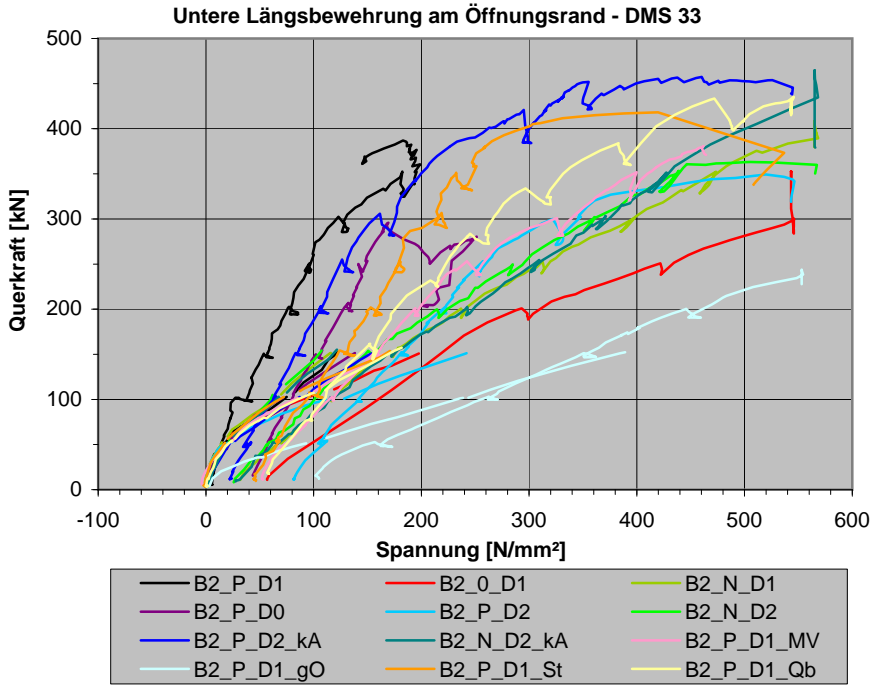


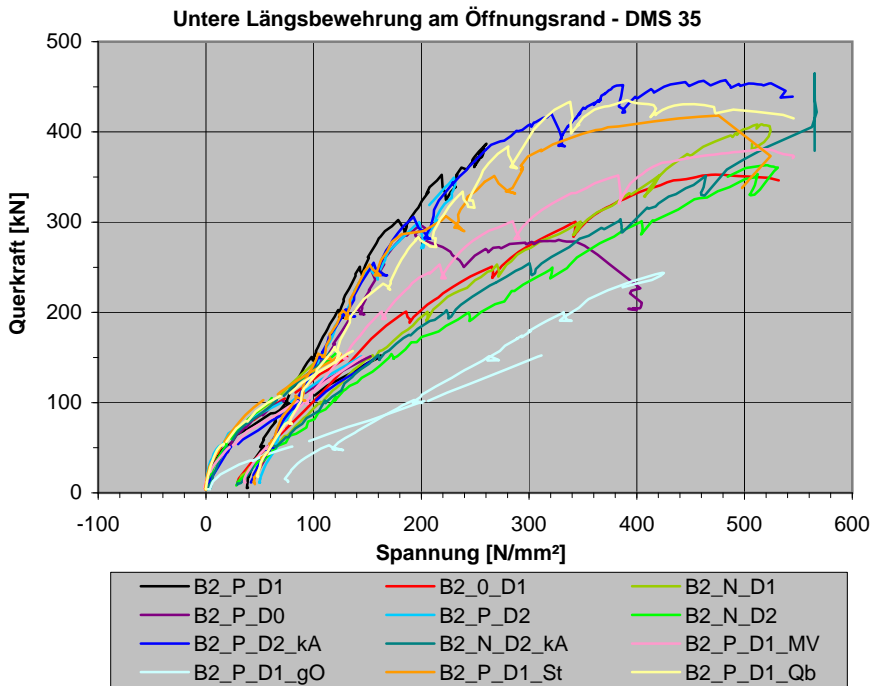
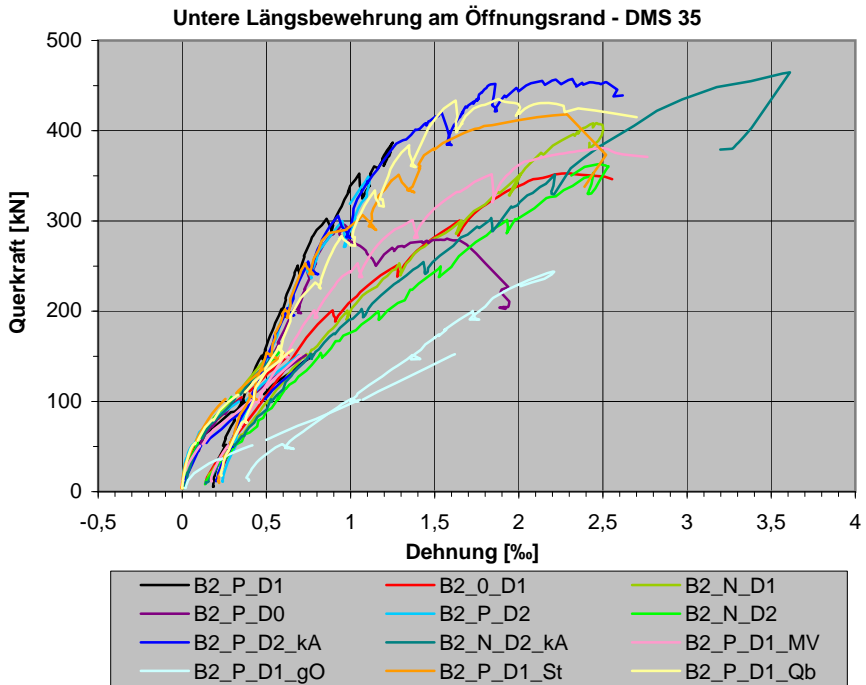


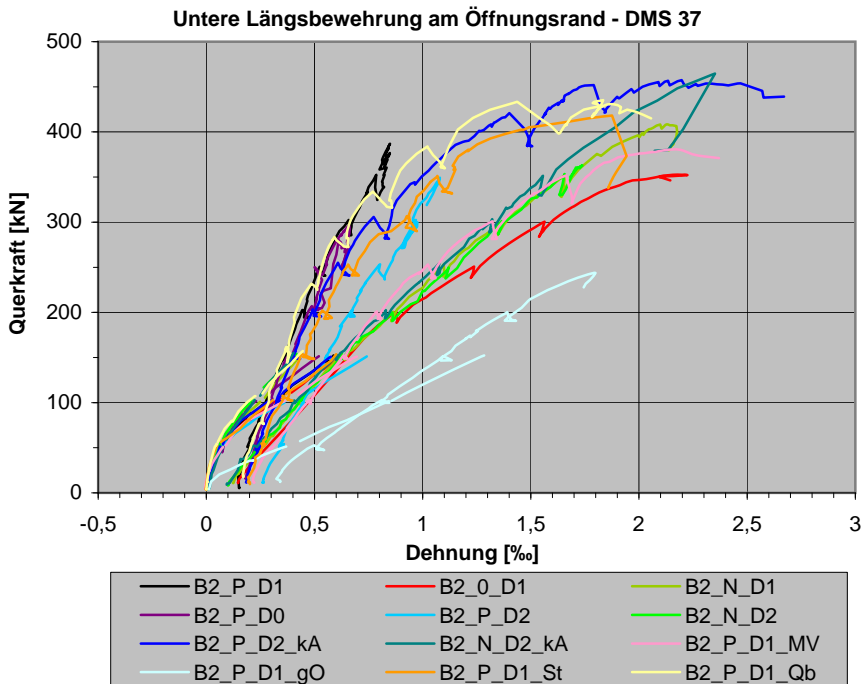
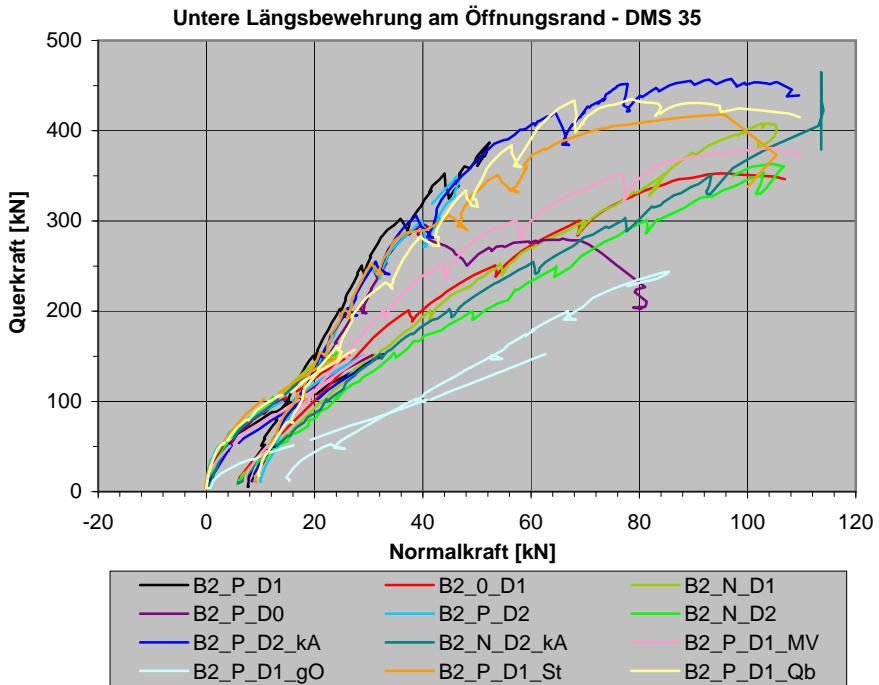
C.2.6. Längsbewehrung

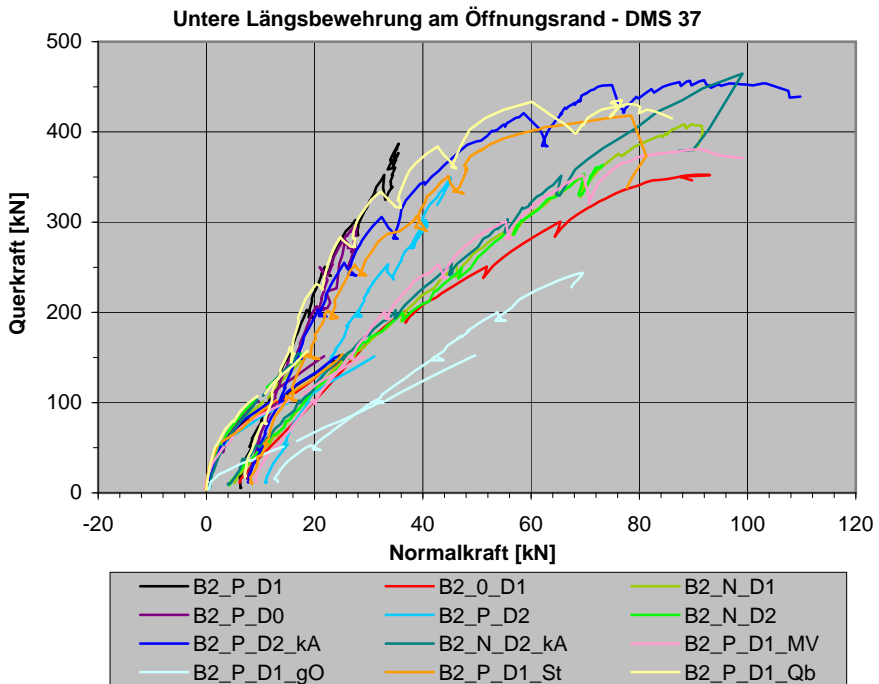
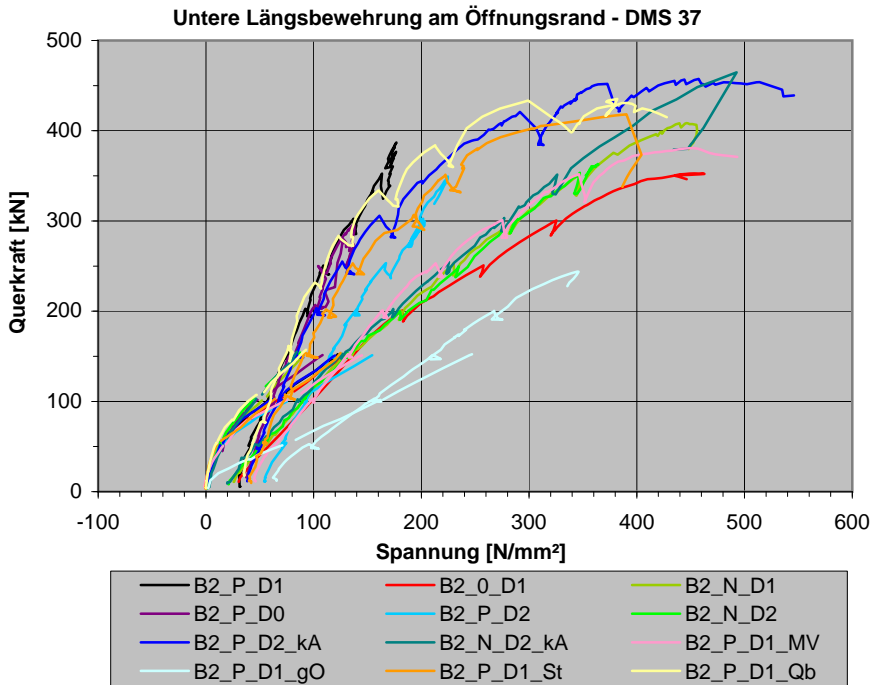


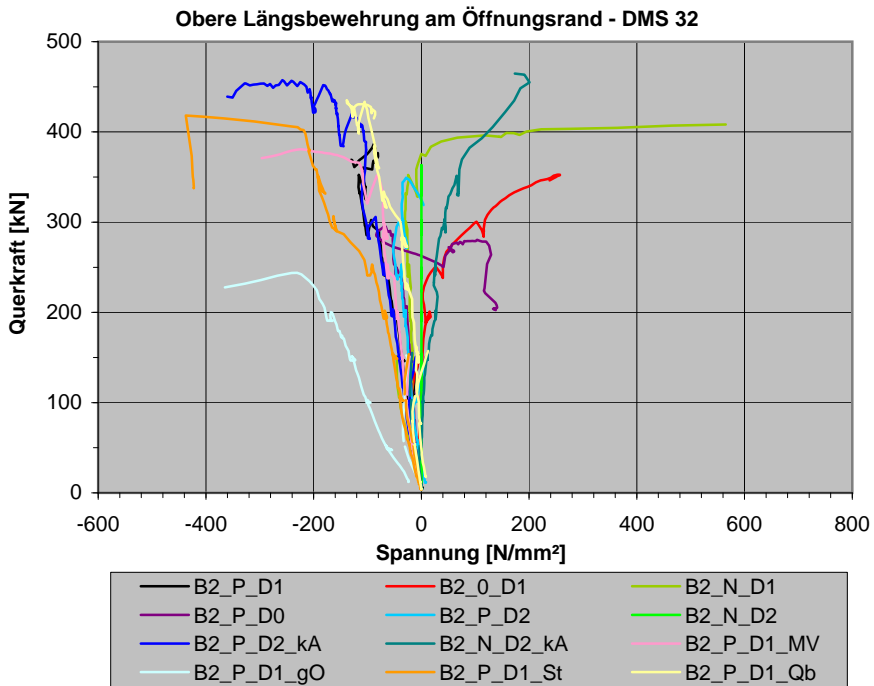
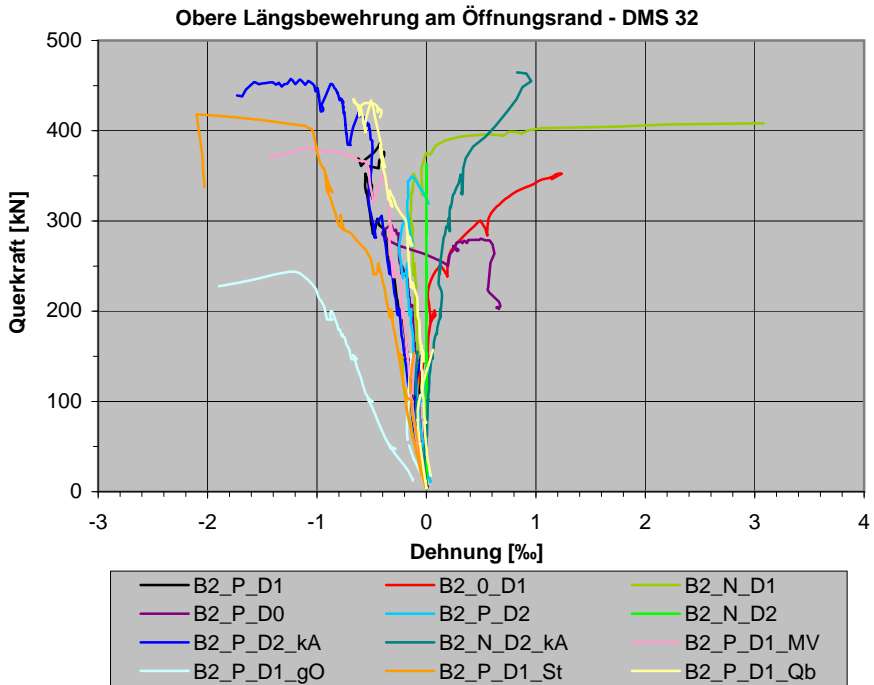


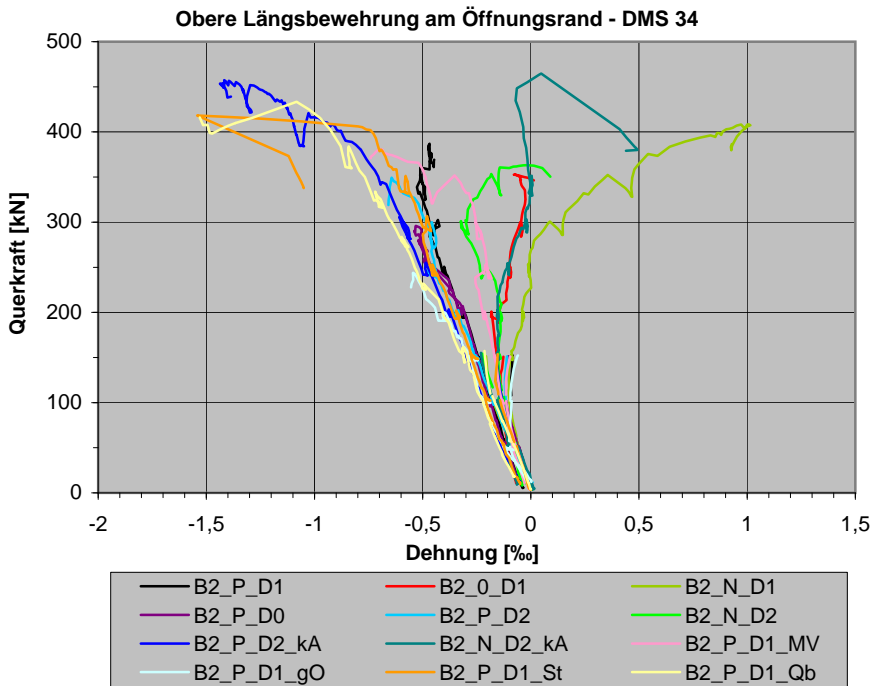
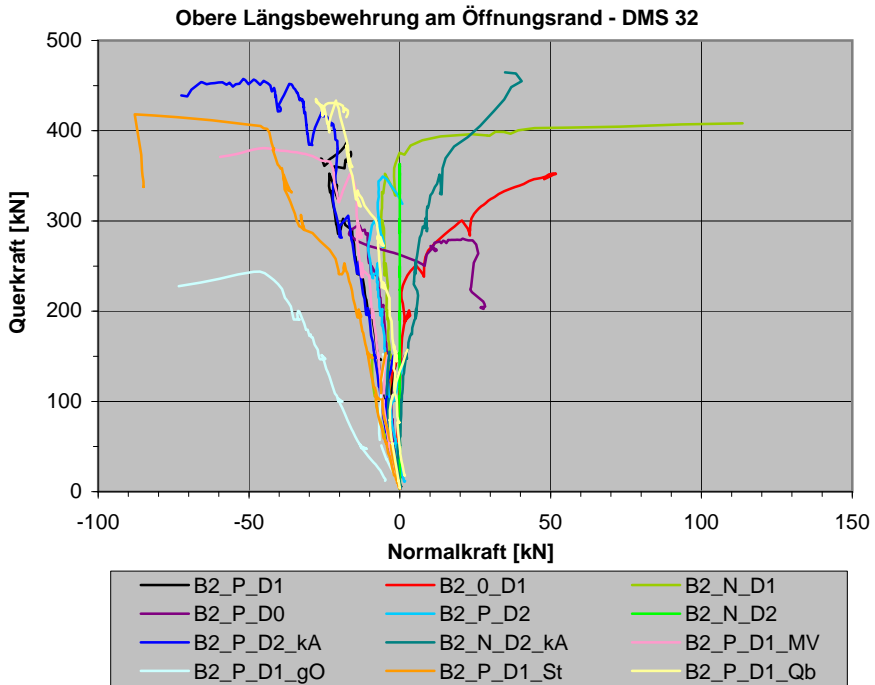


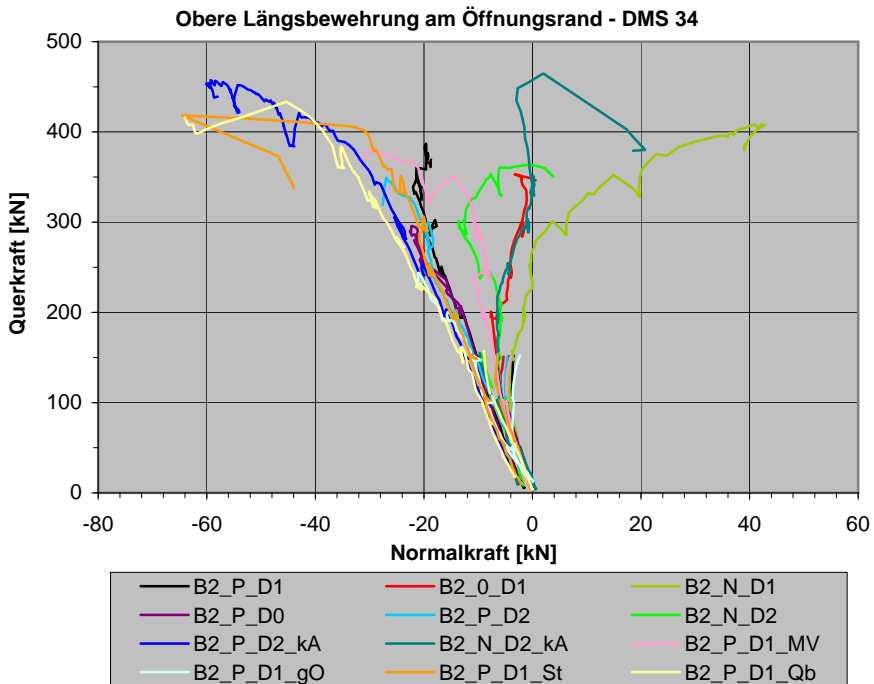
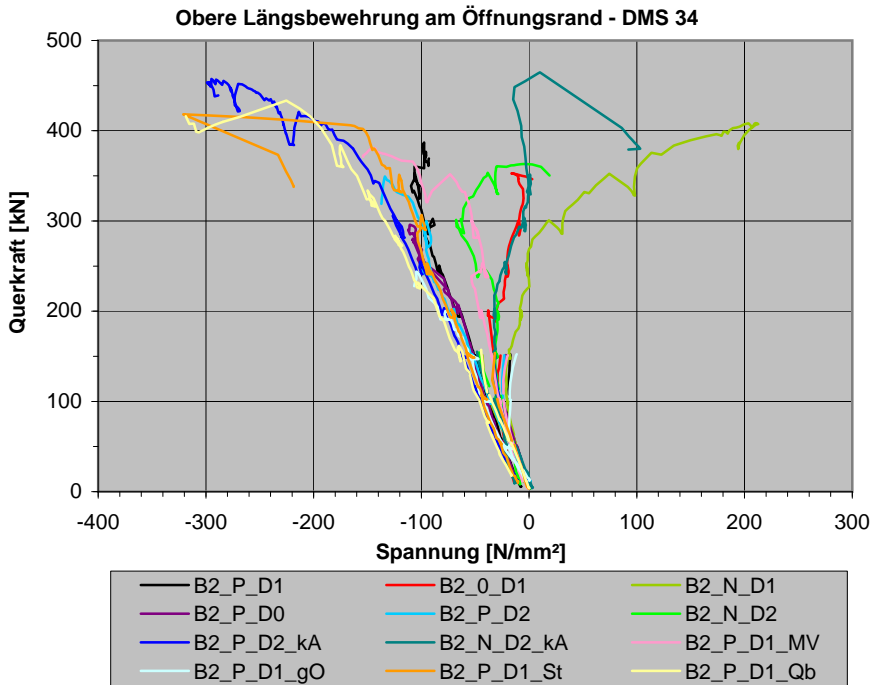


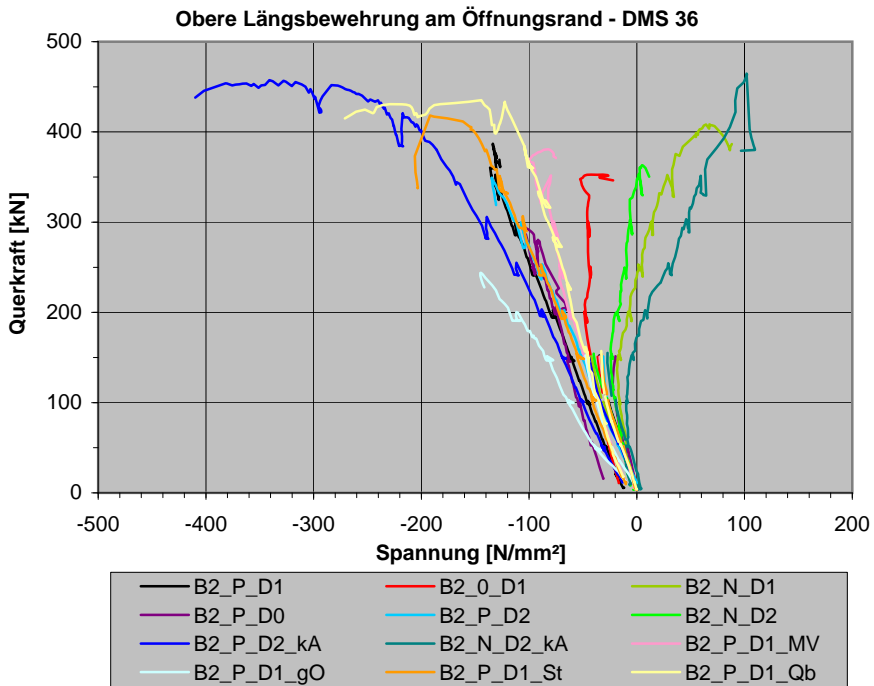
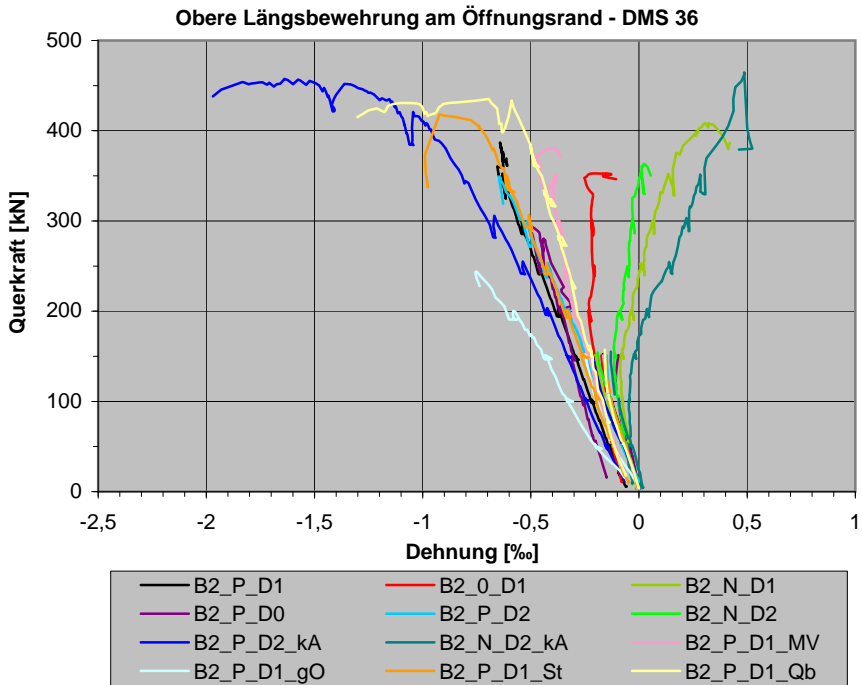


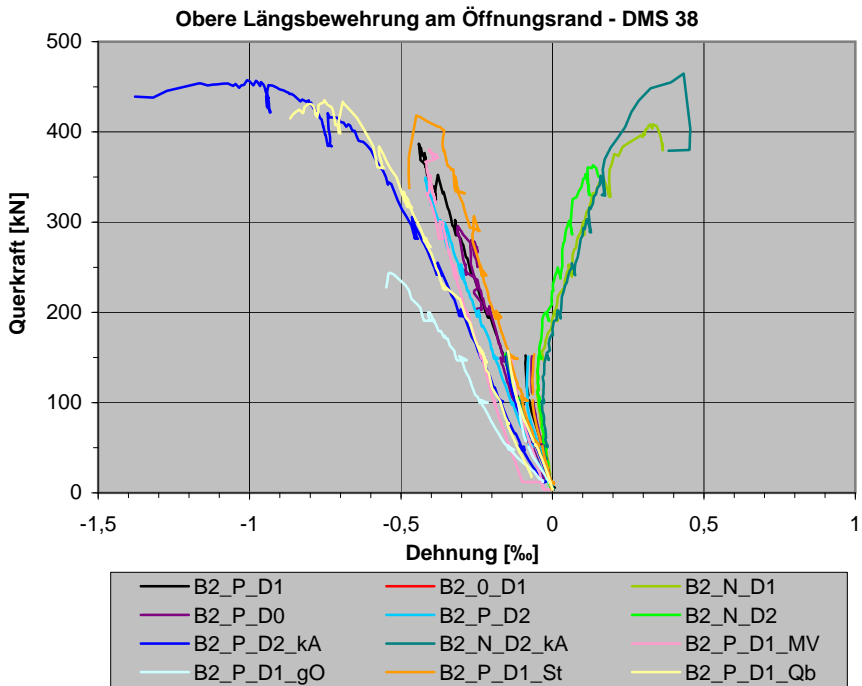
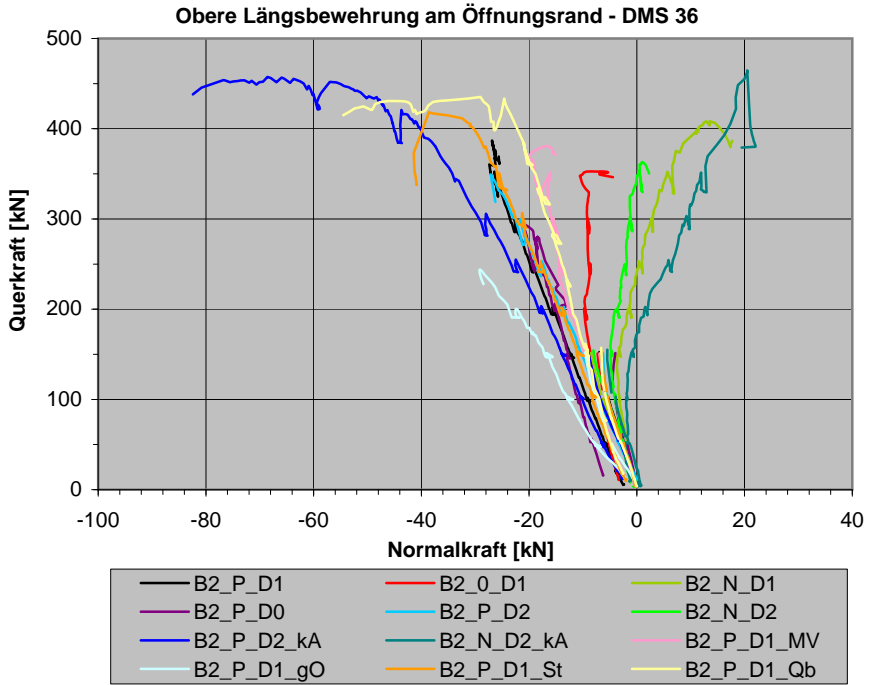


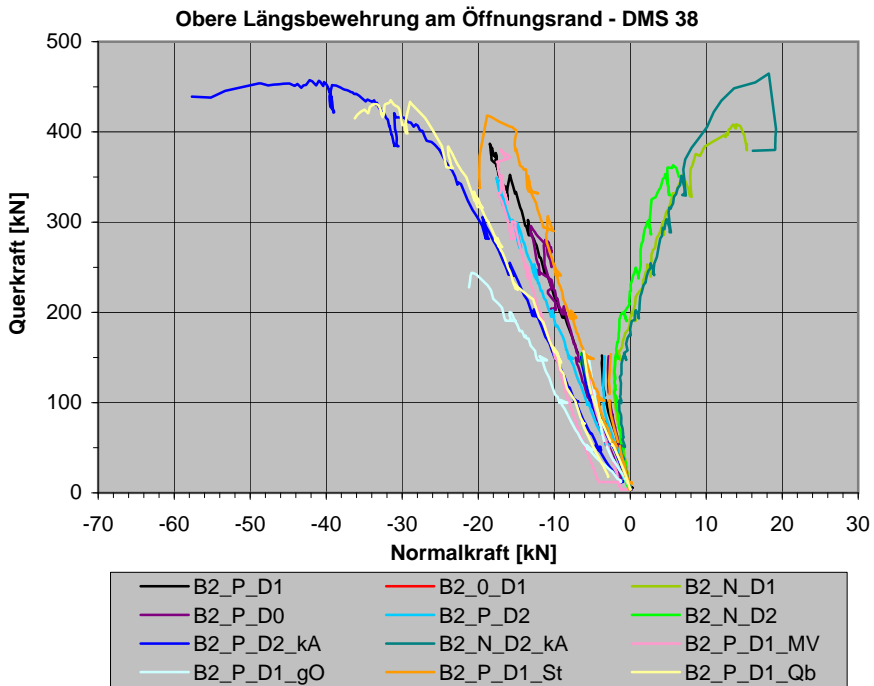
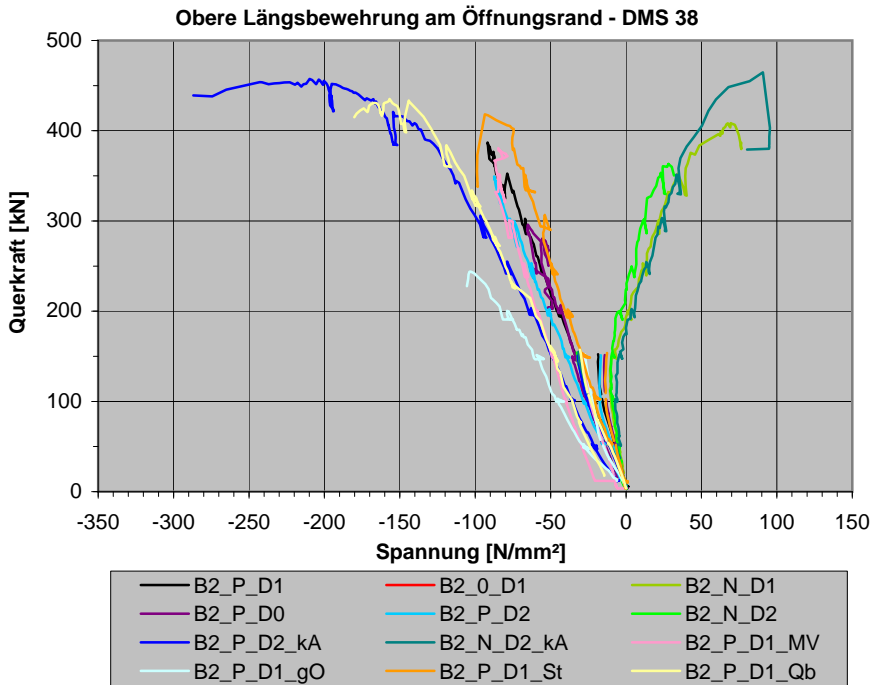




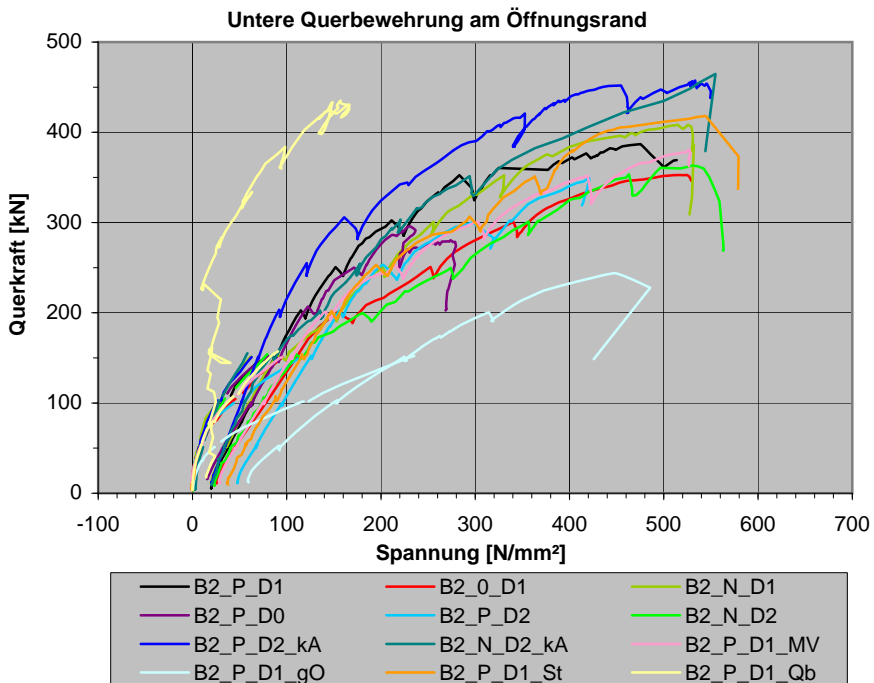
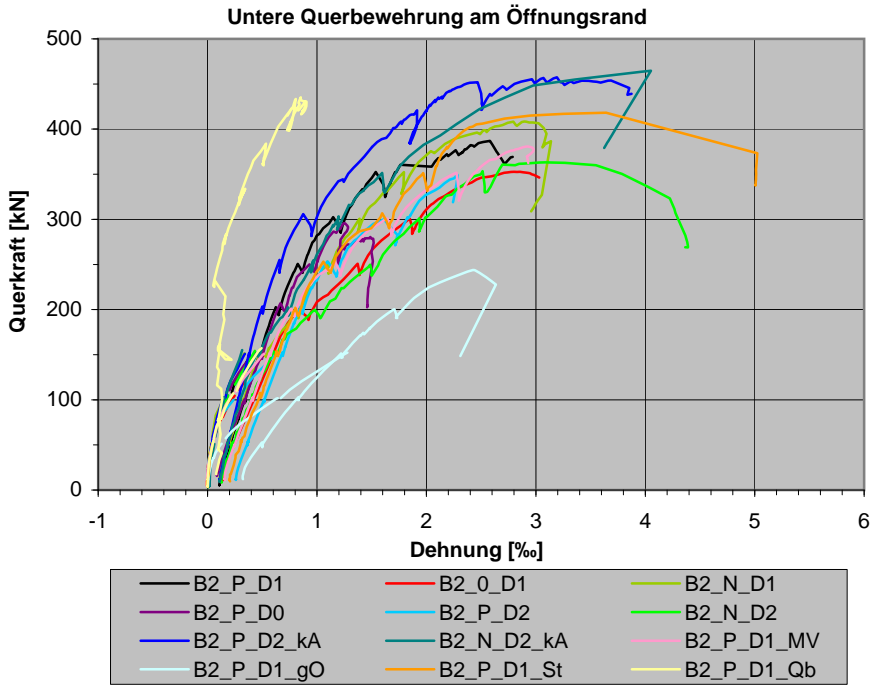


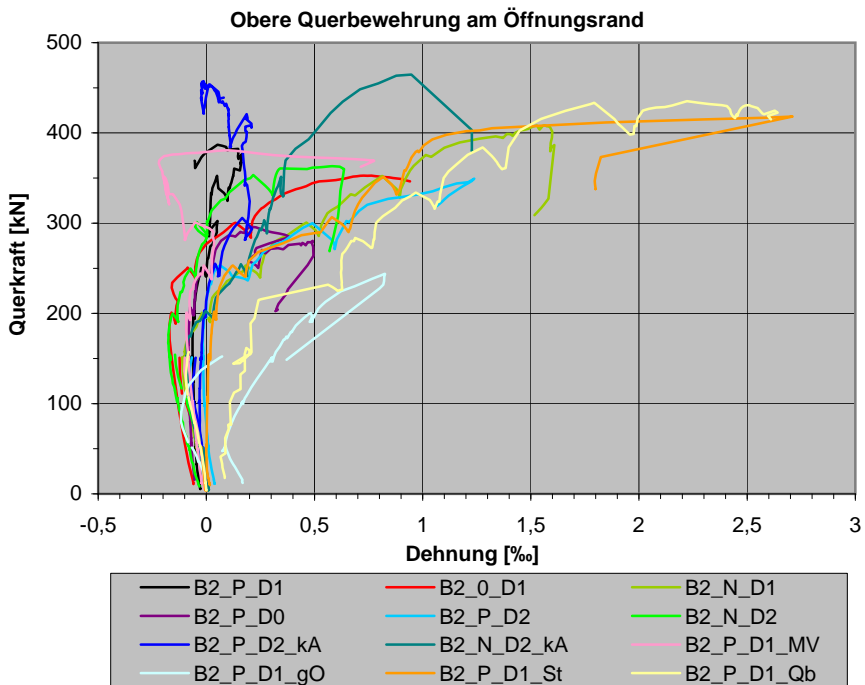
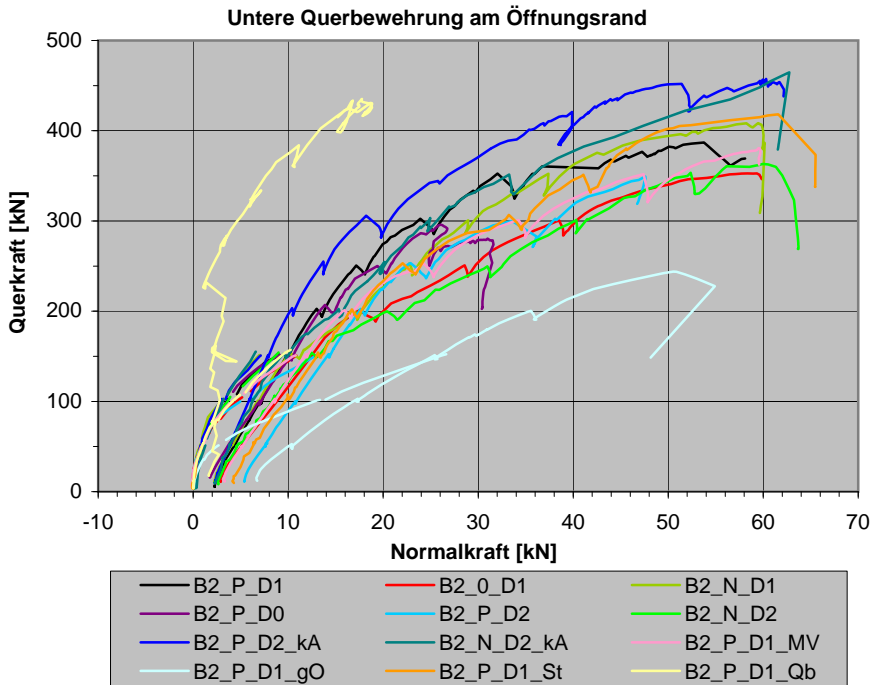


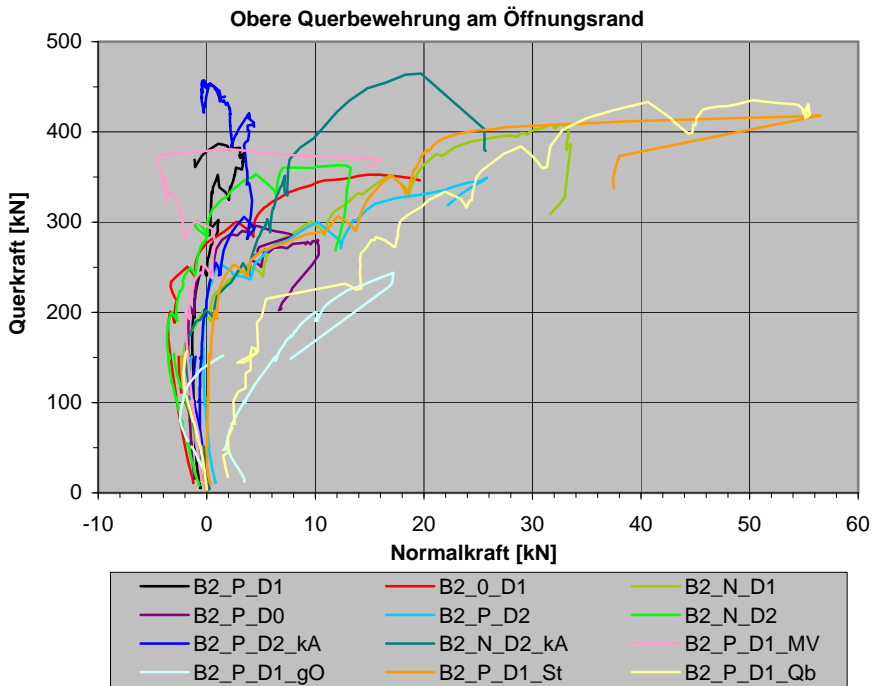
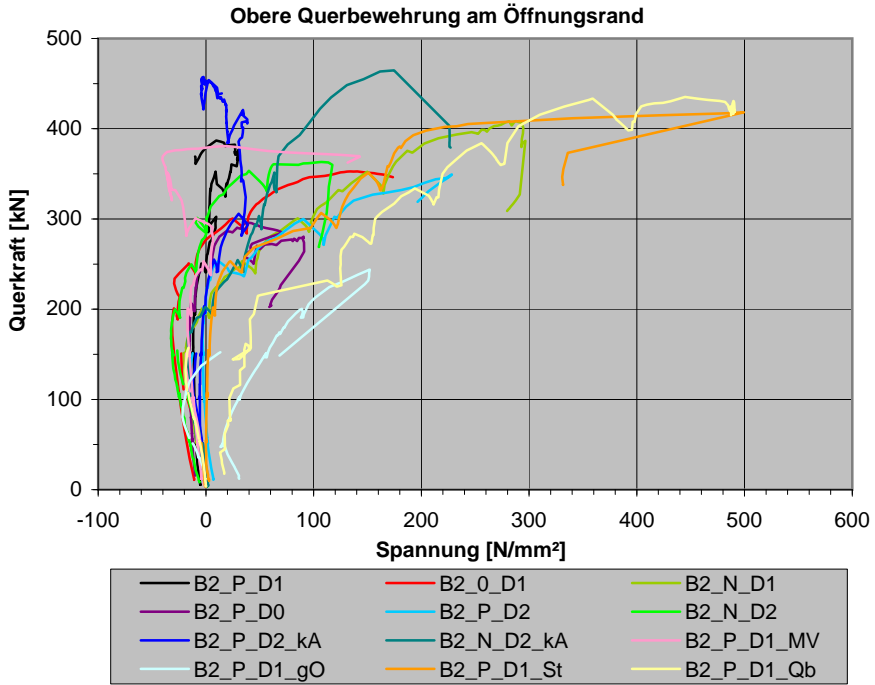




C.2.7. Querbewehrung

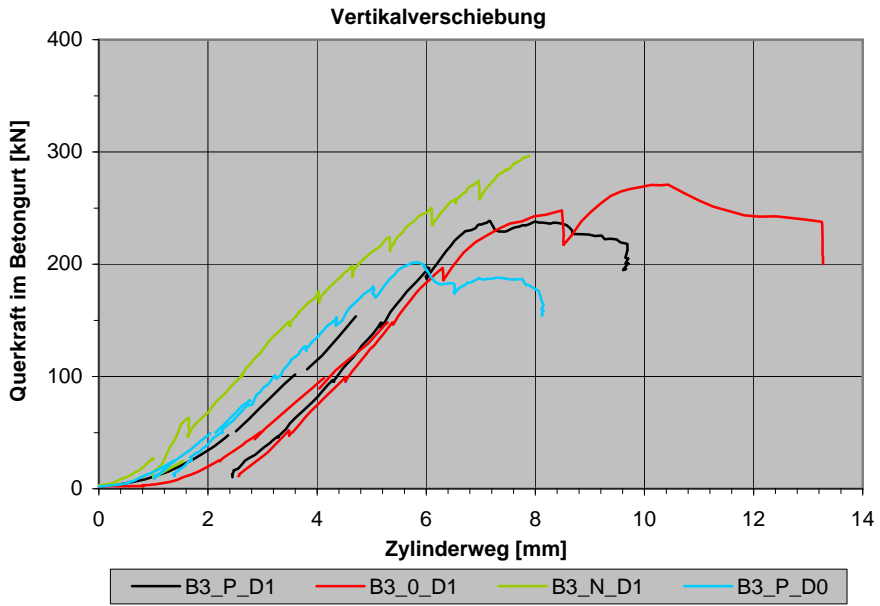


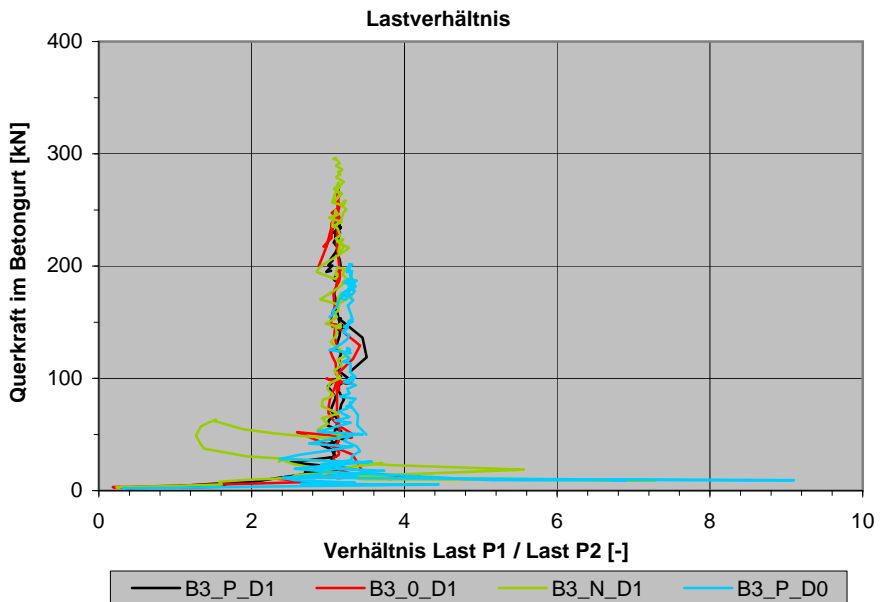
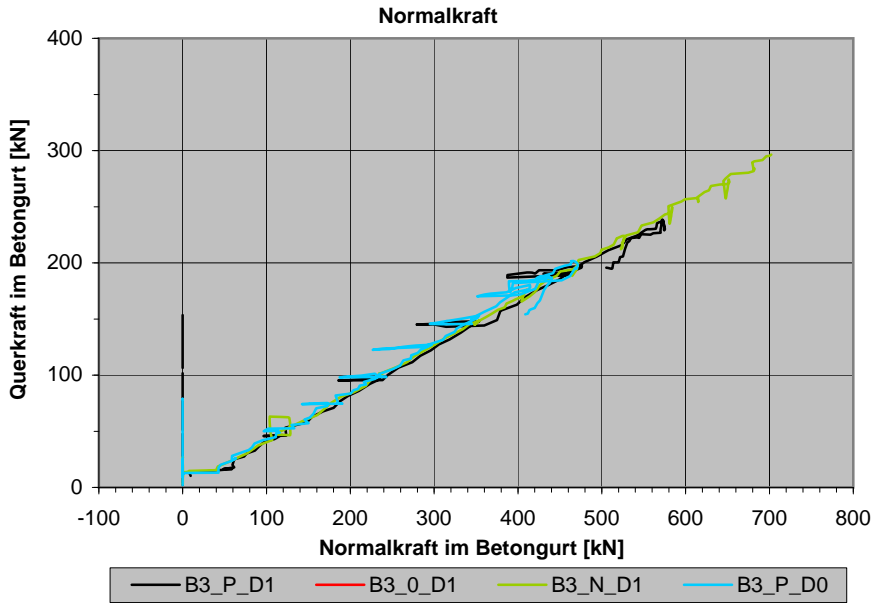




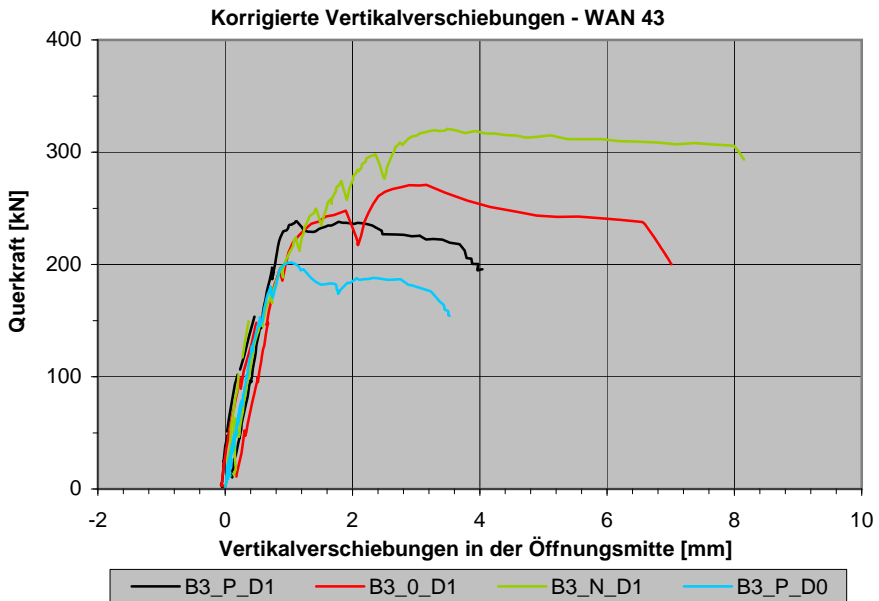
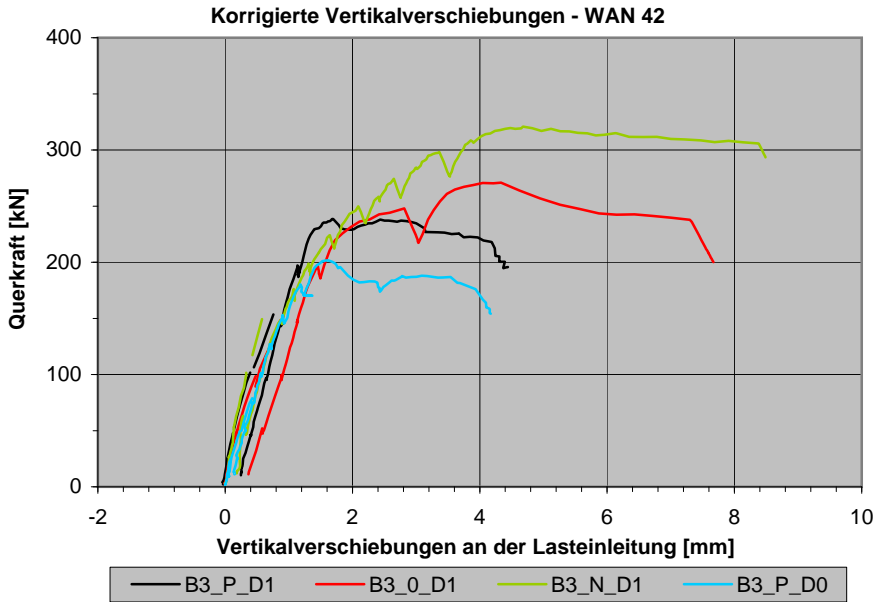
C.3. Bereich 3

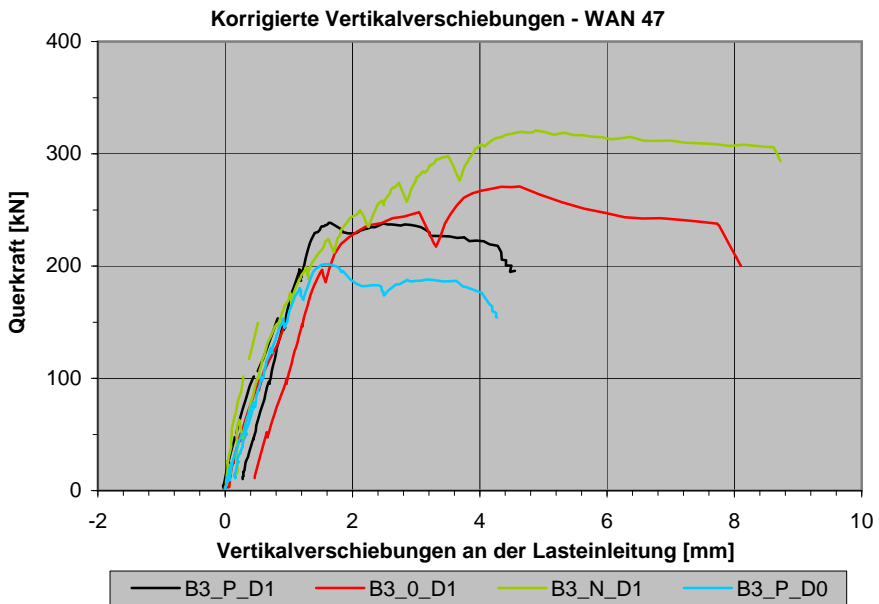
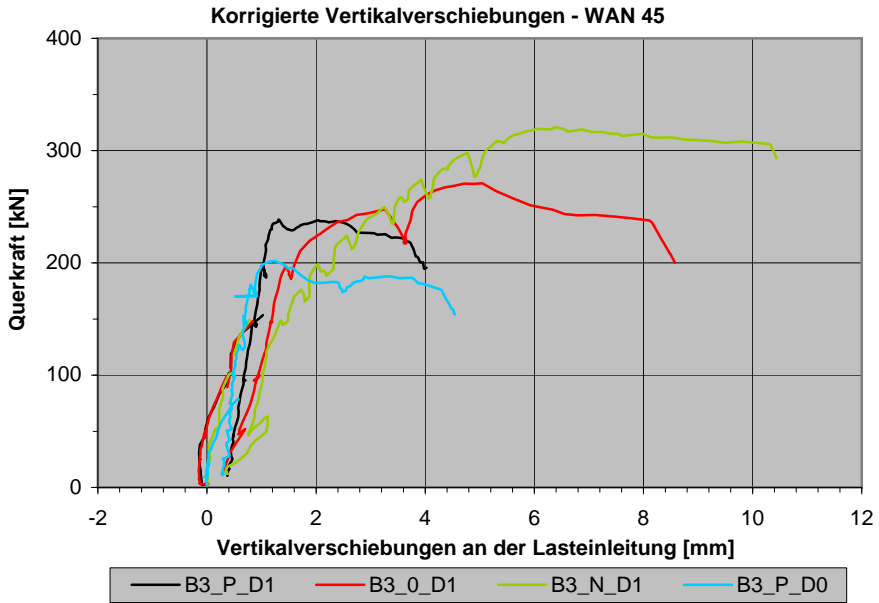
C.3.1. Kräfte

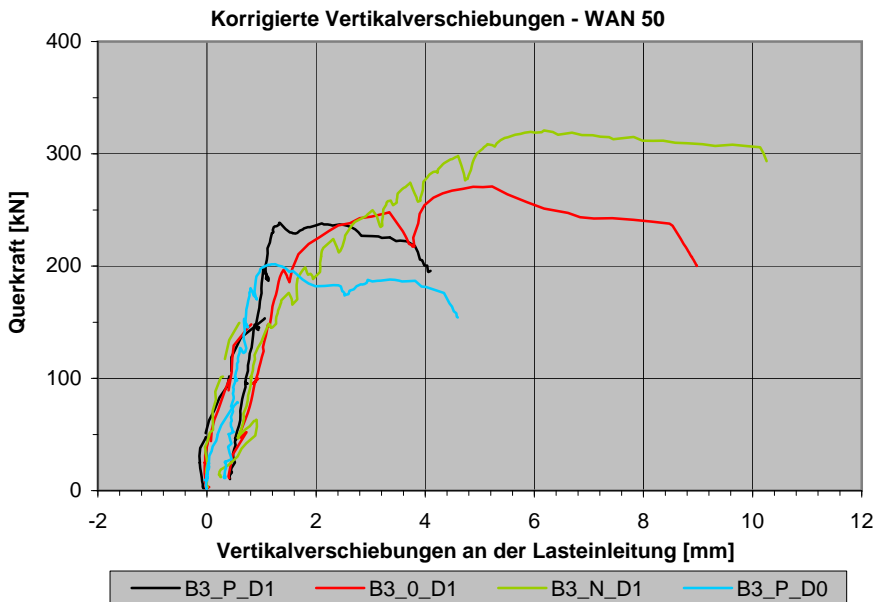
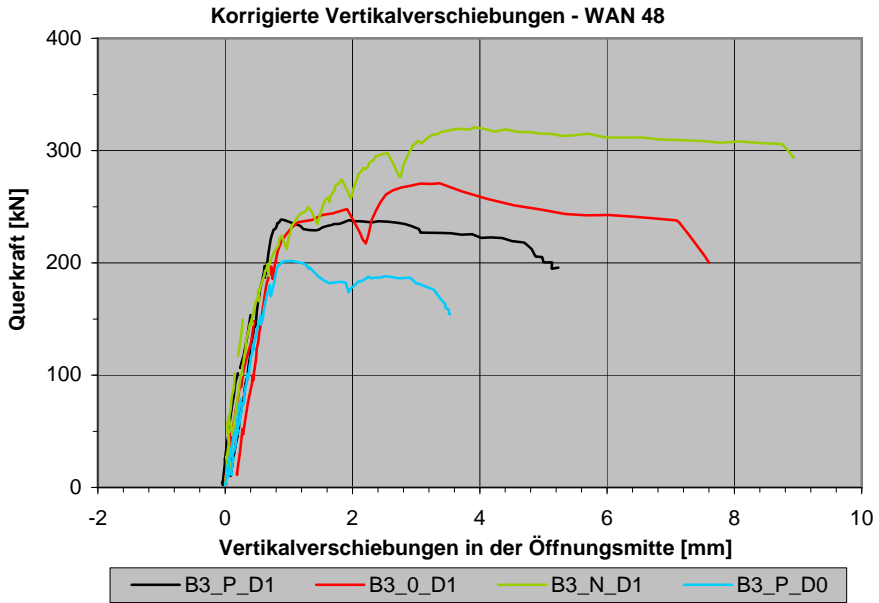


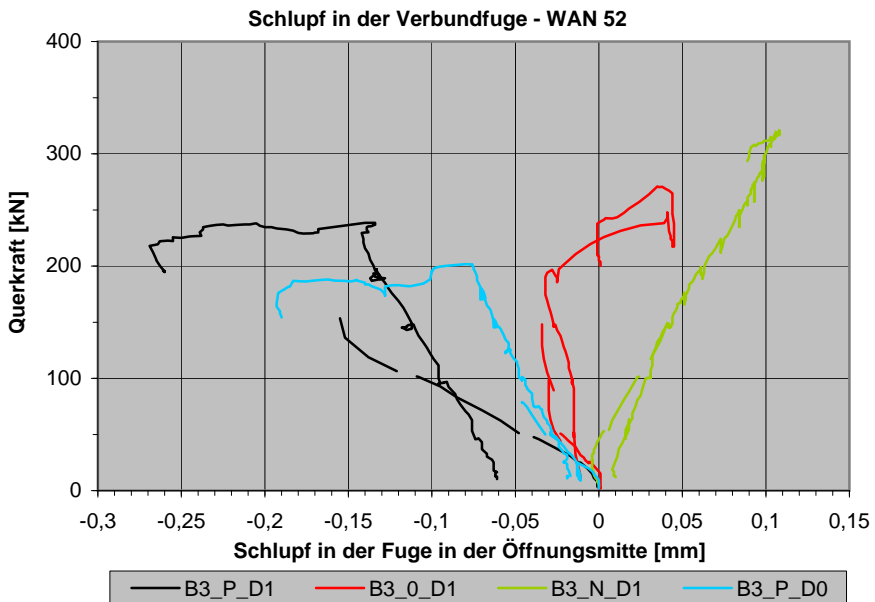
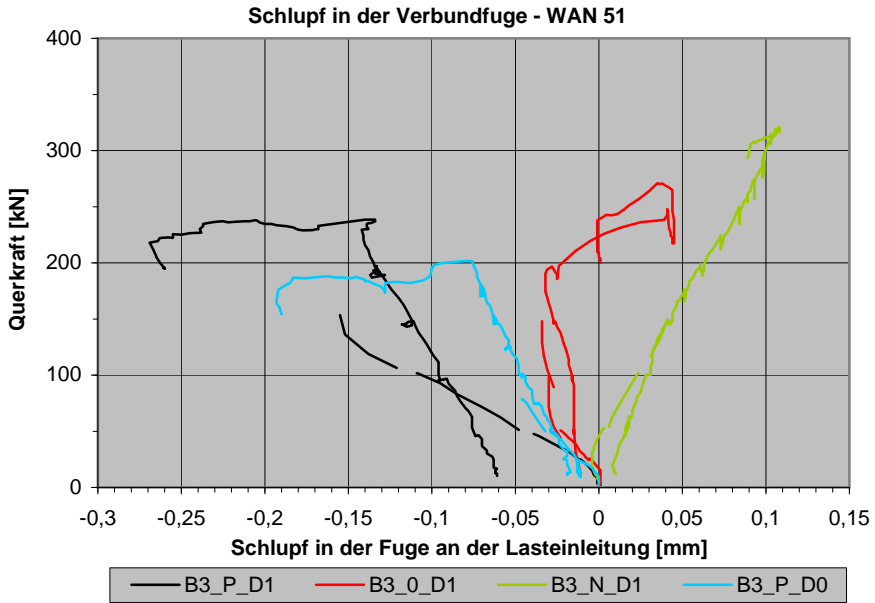


C.3.2. Verformungen

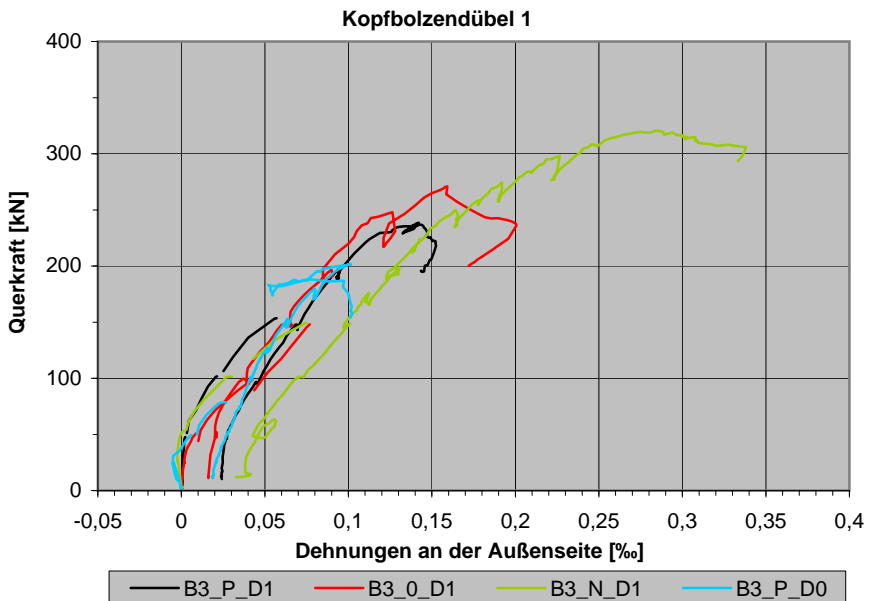
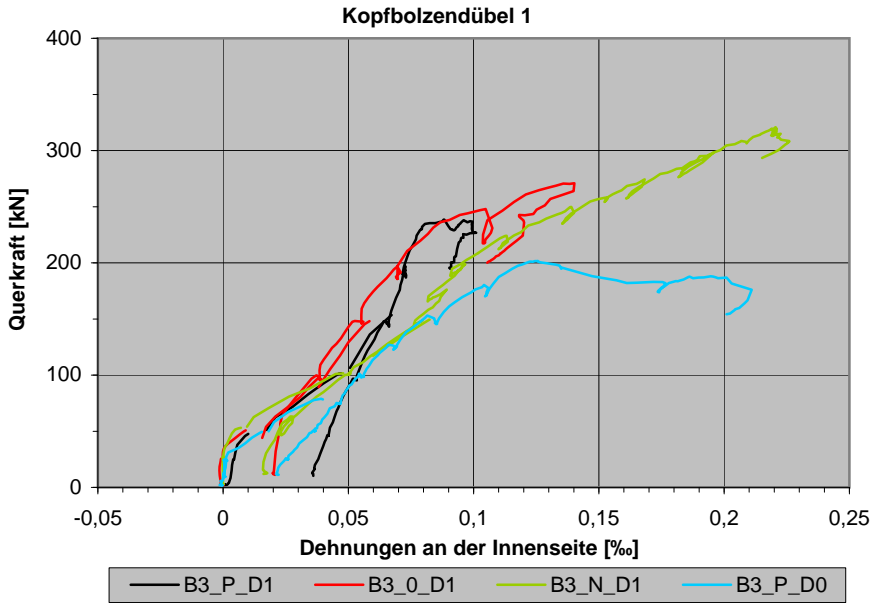


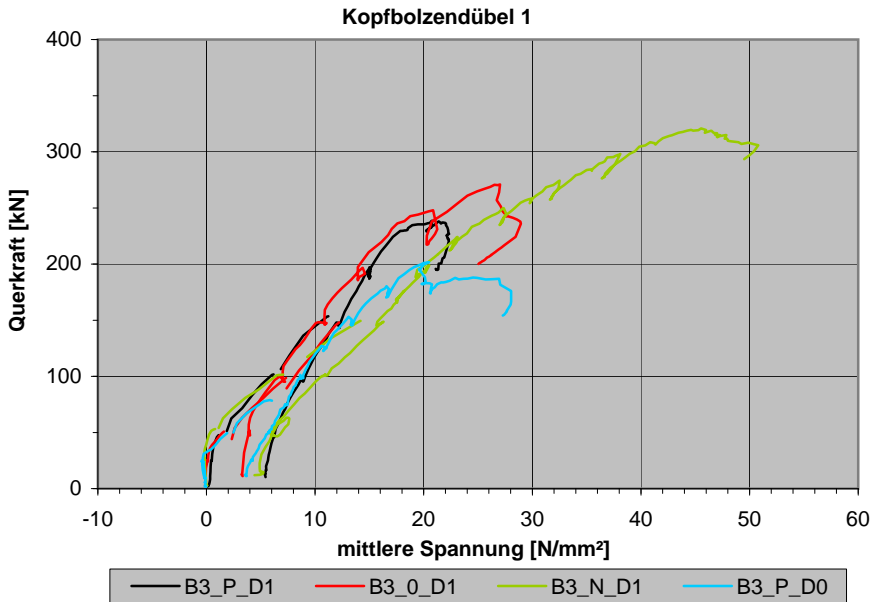
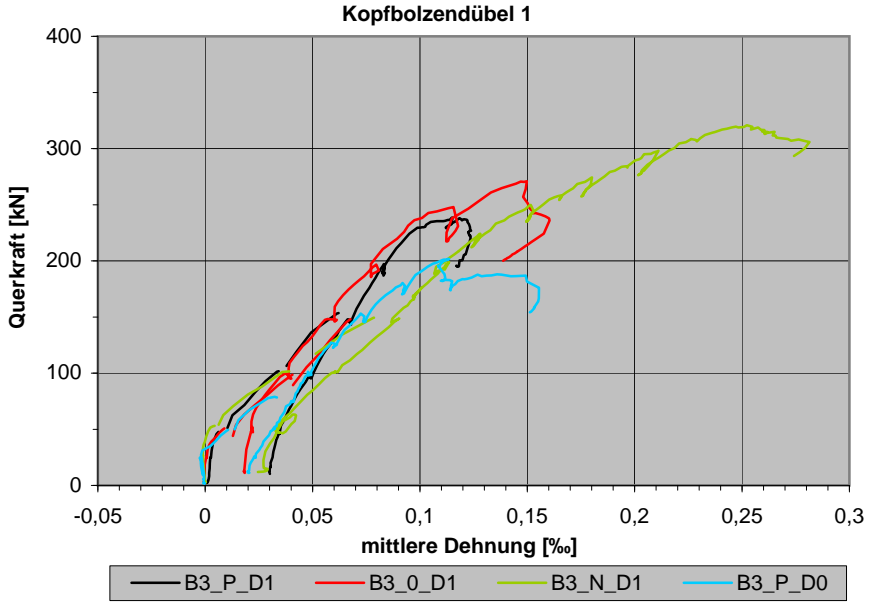


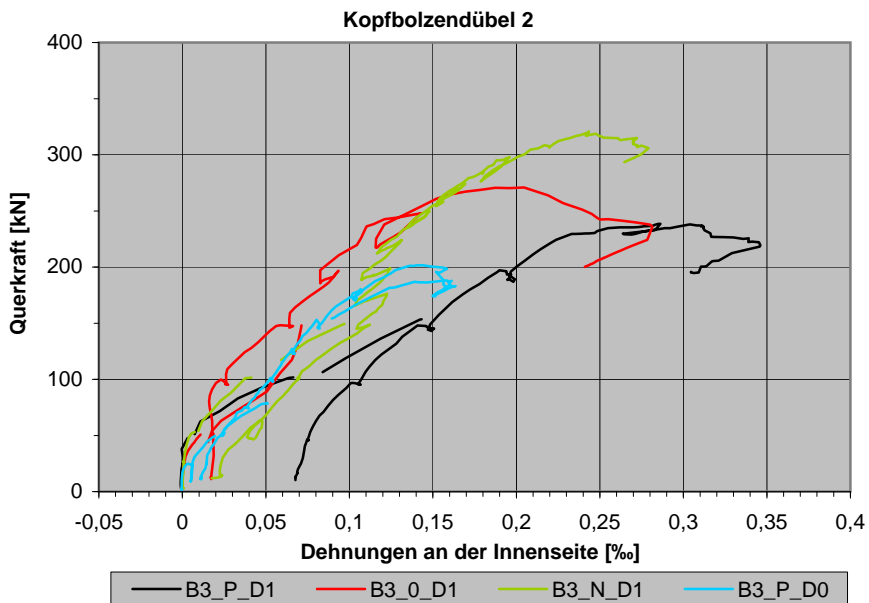
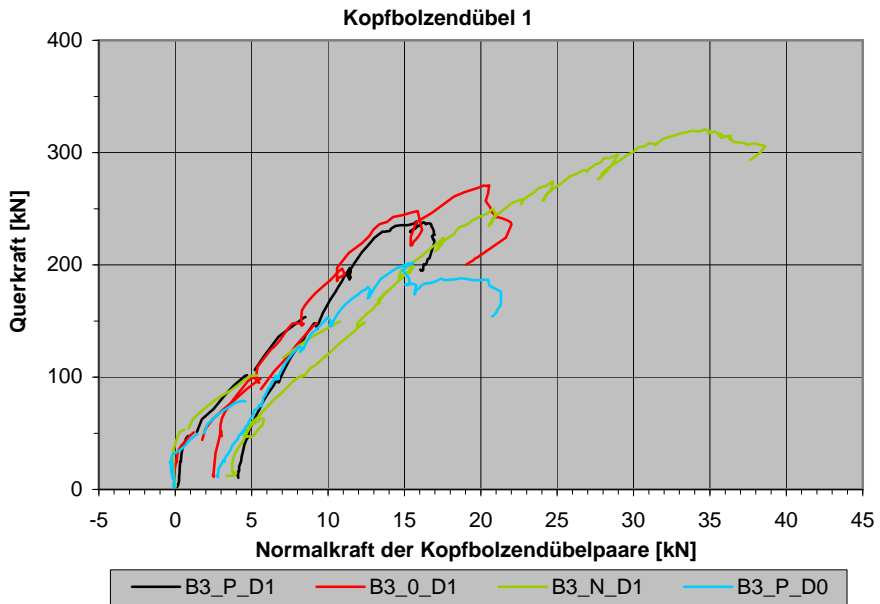


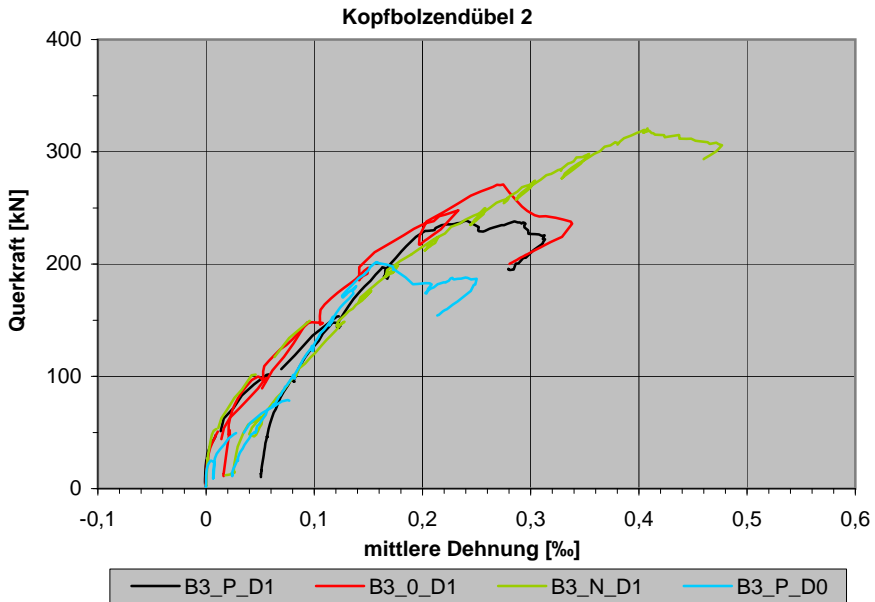
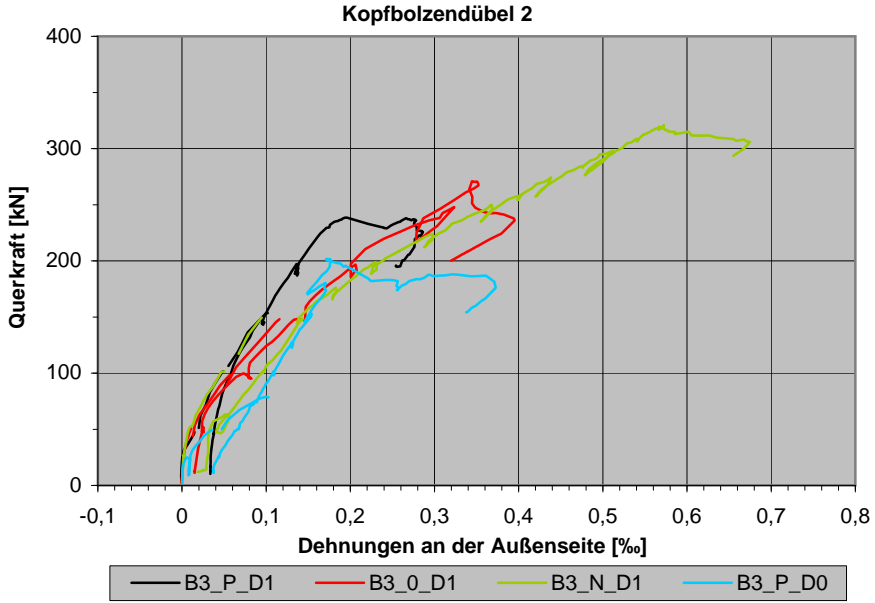


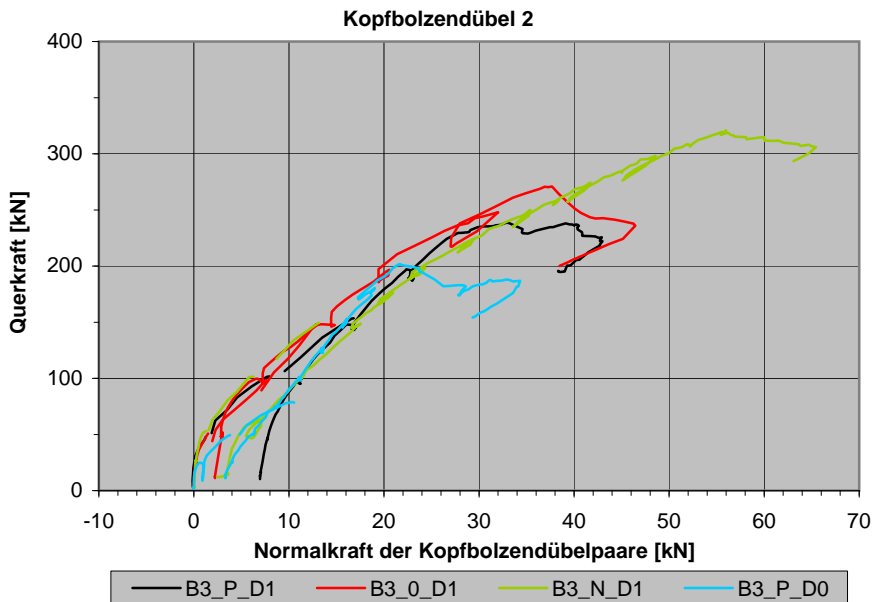
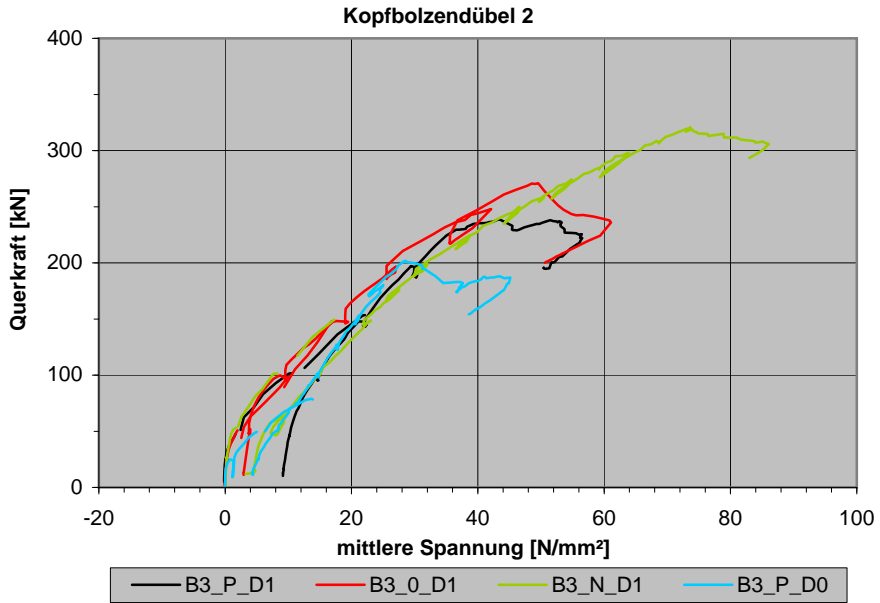
C.3.3. Kopfbolzendübel

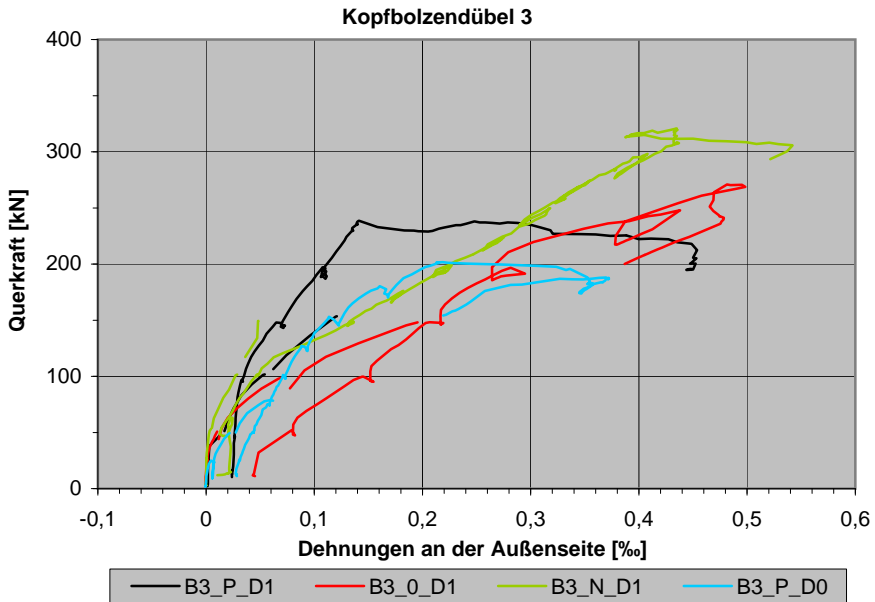
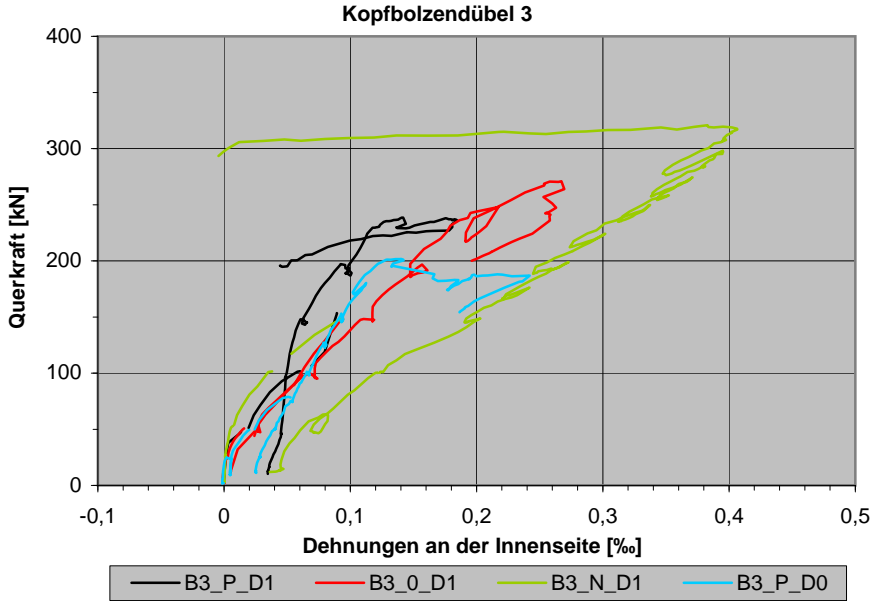


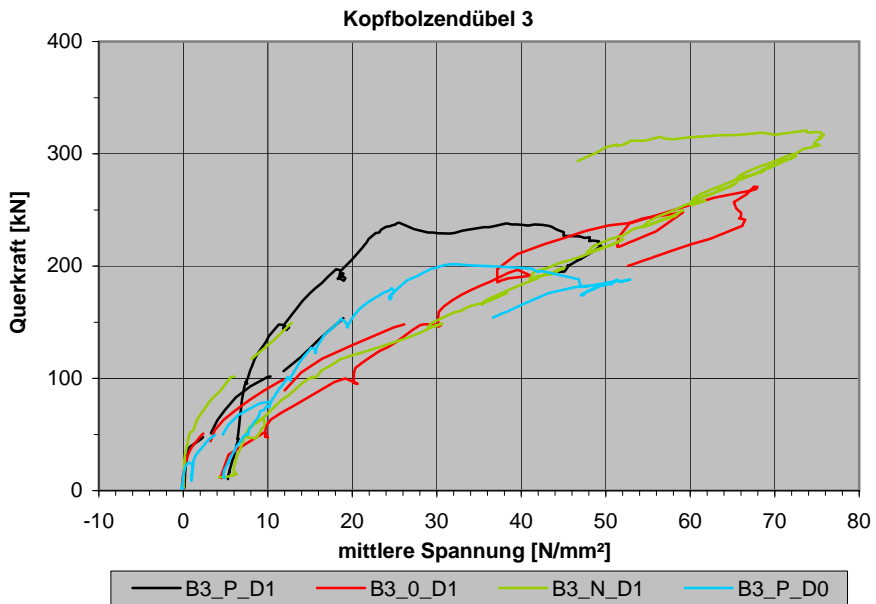
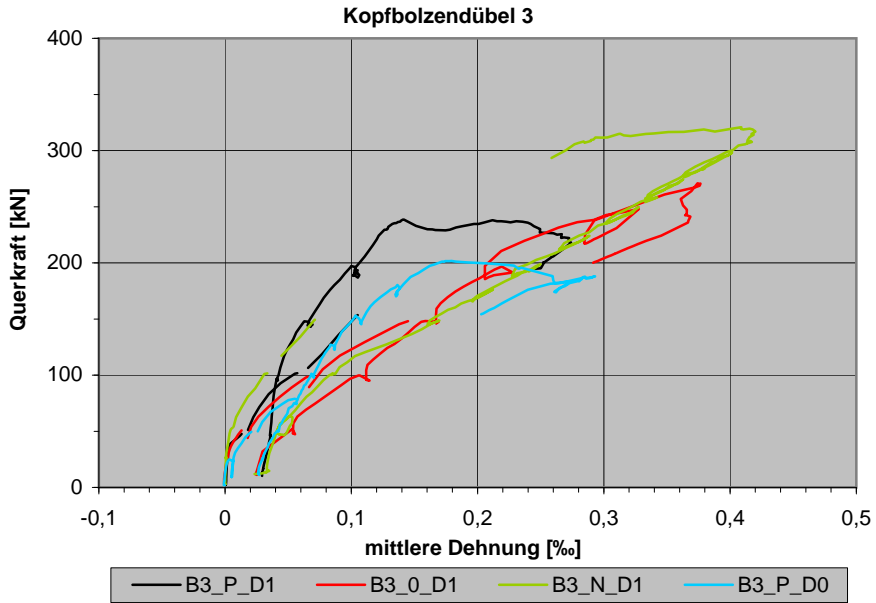


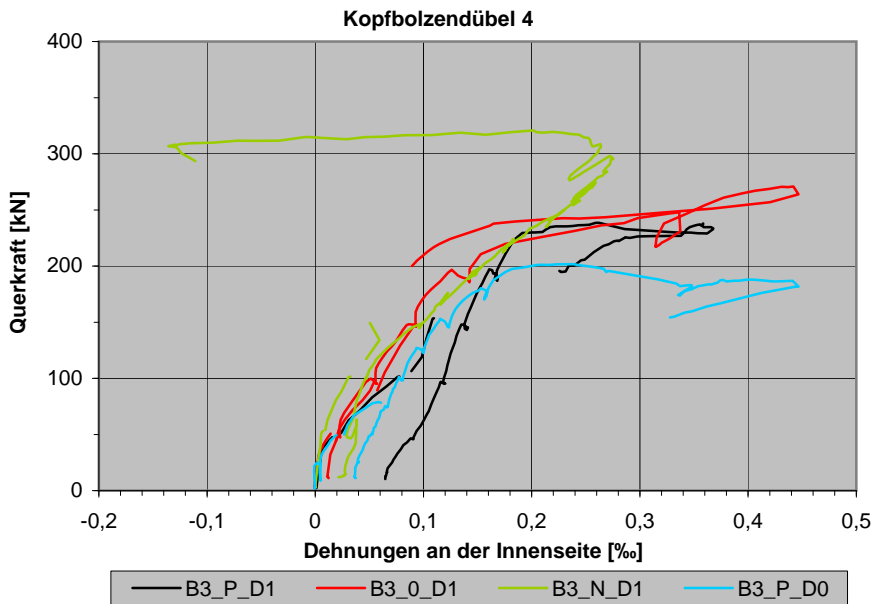
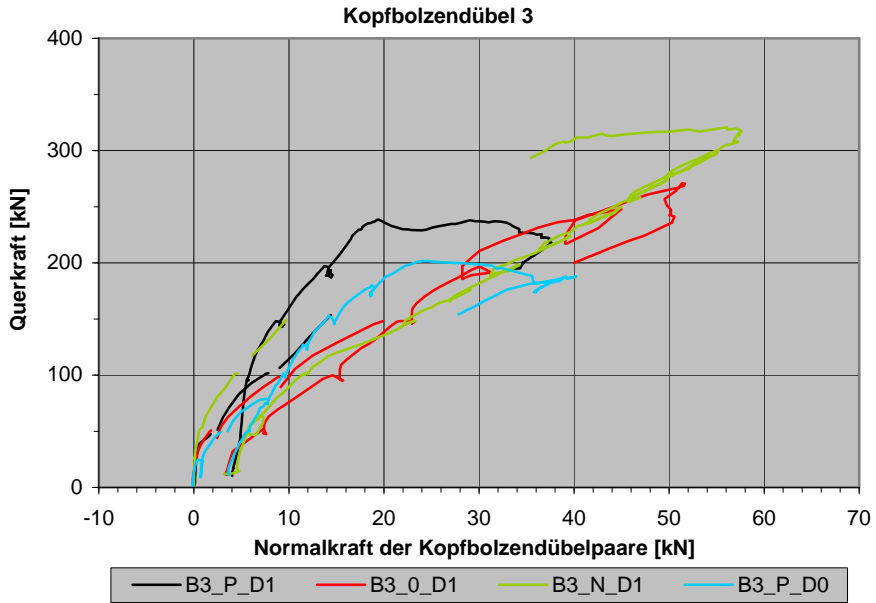


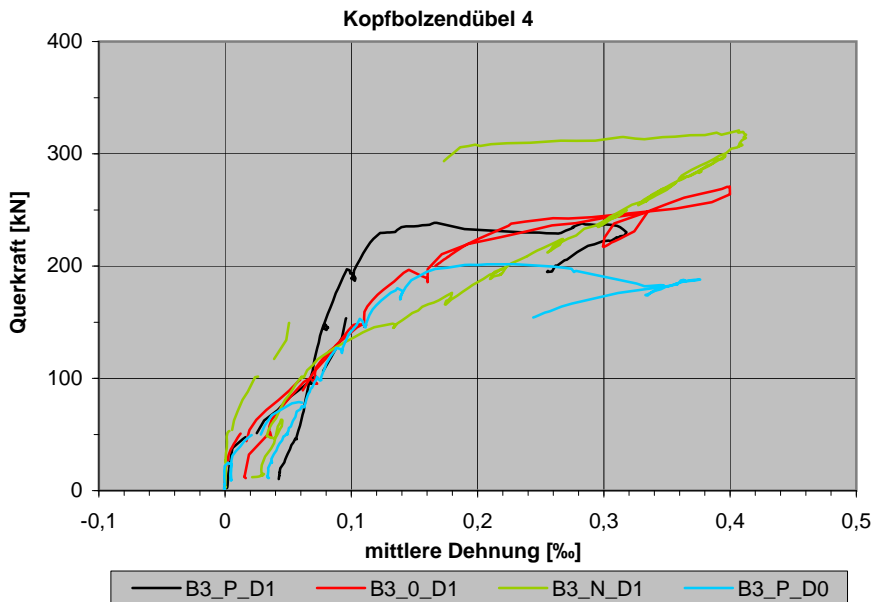
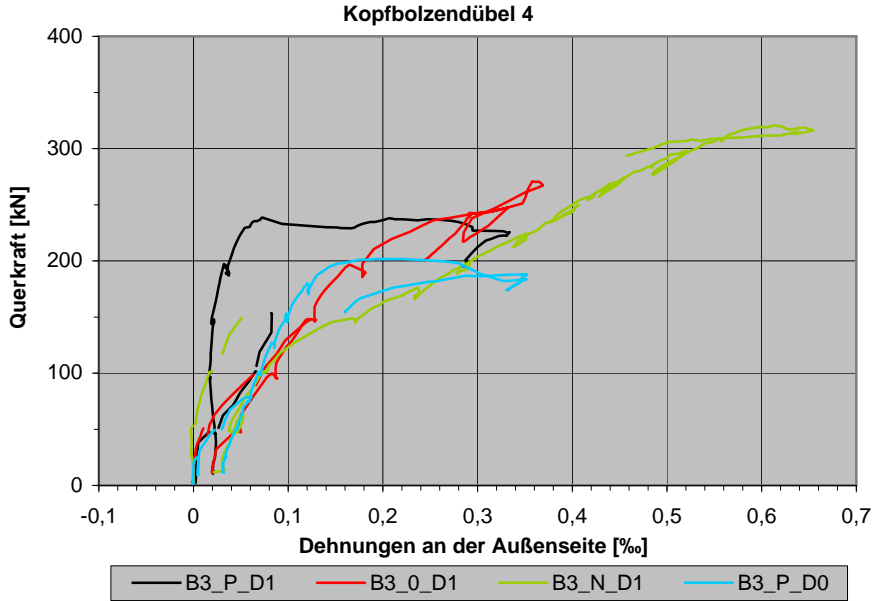


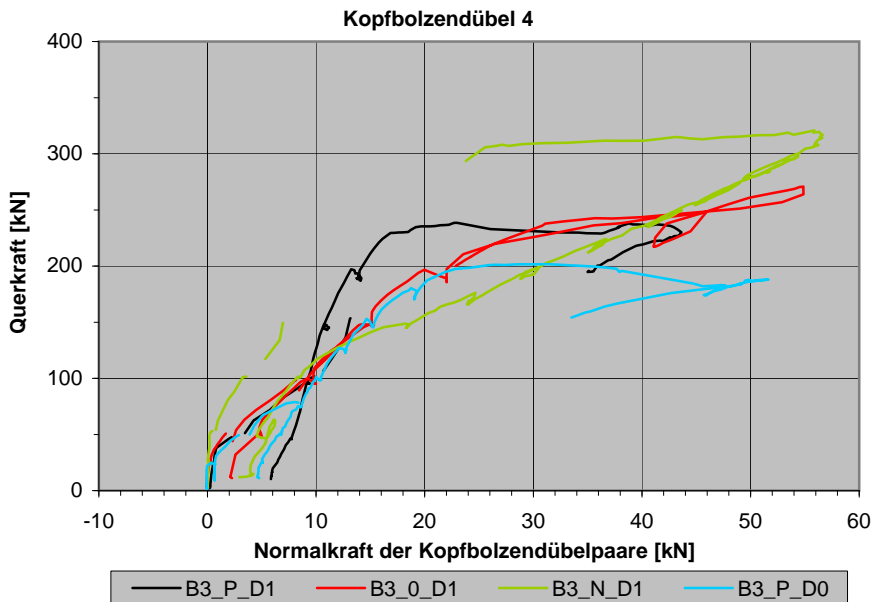
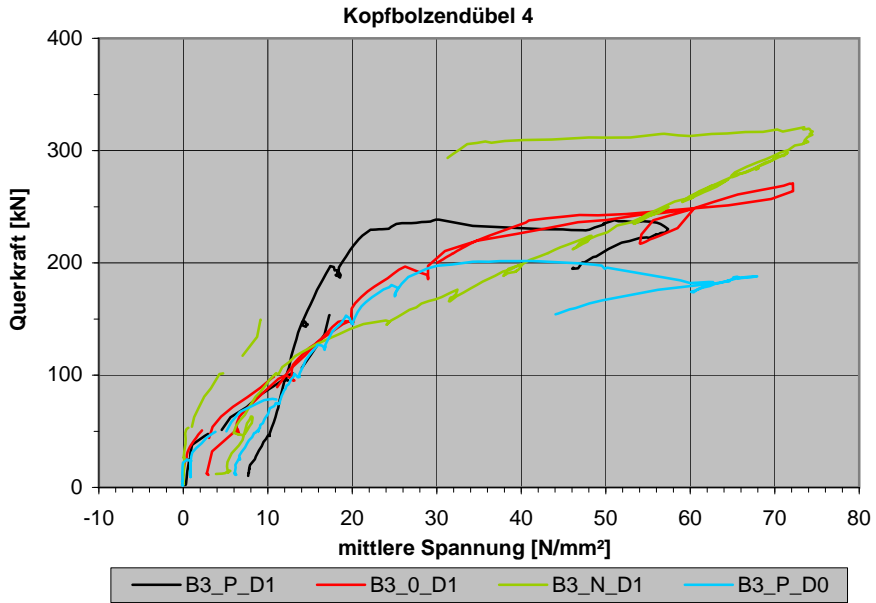


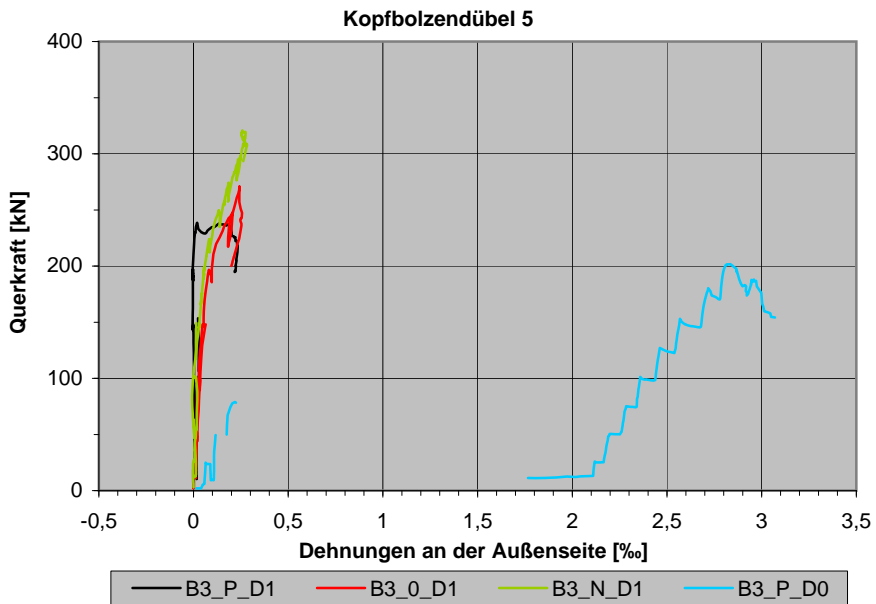
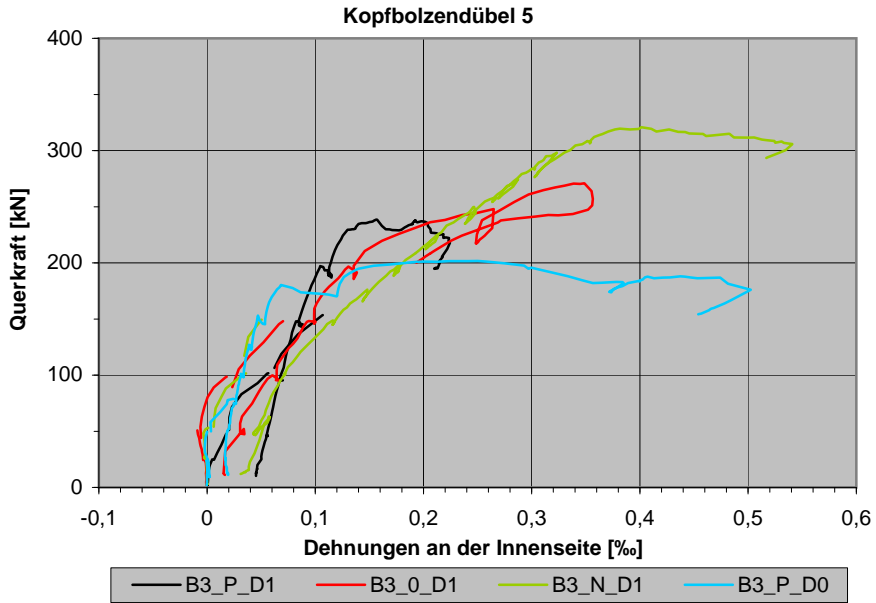


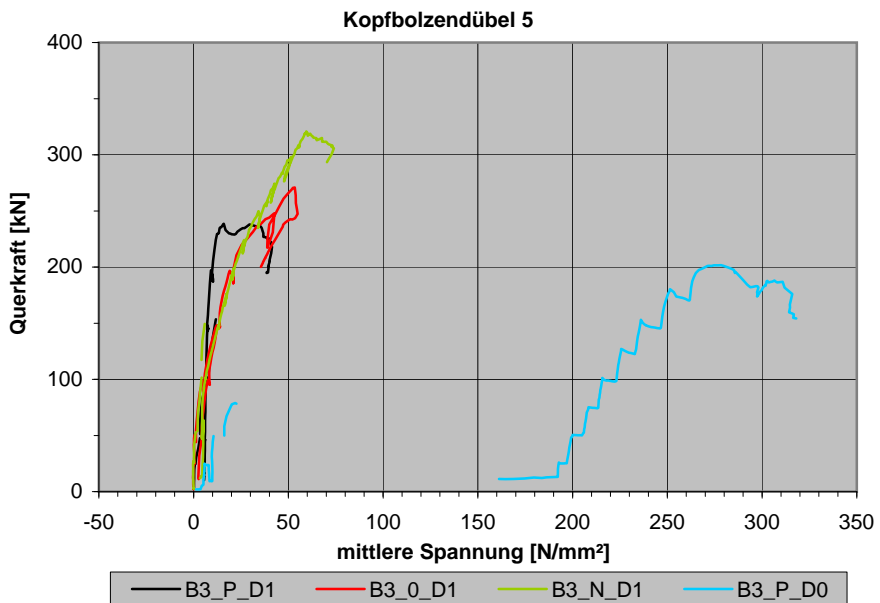
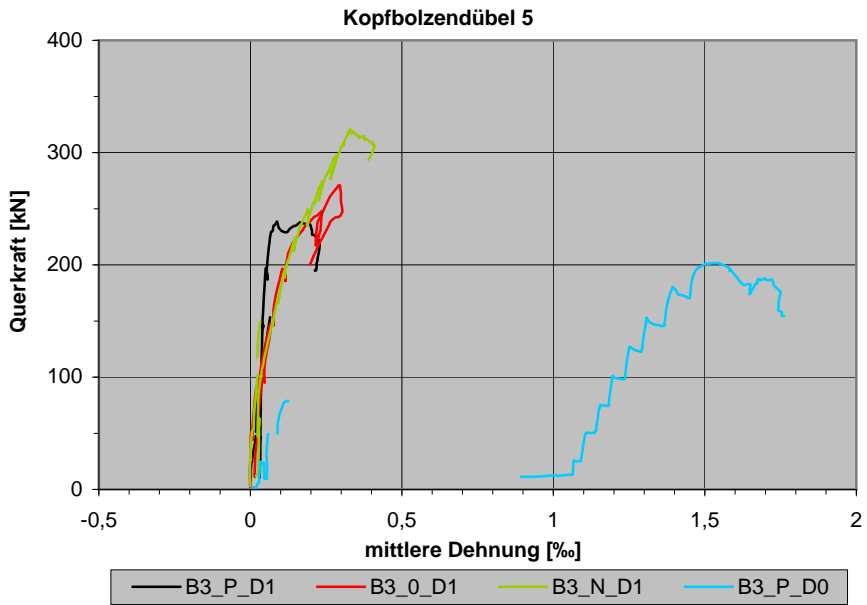


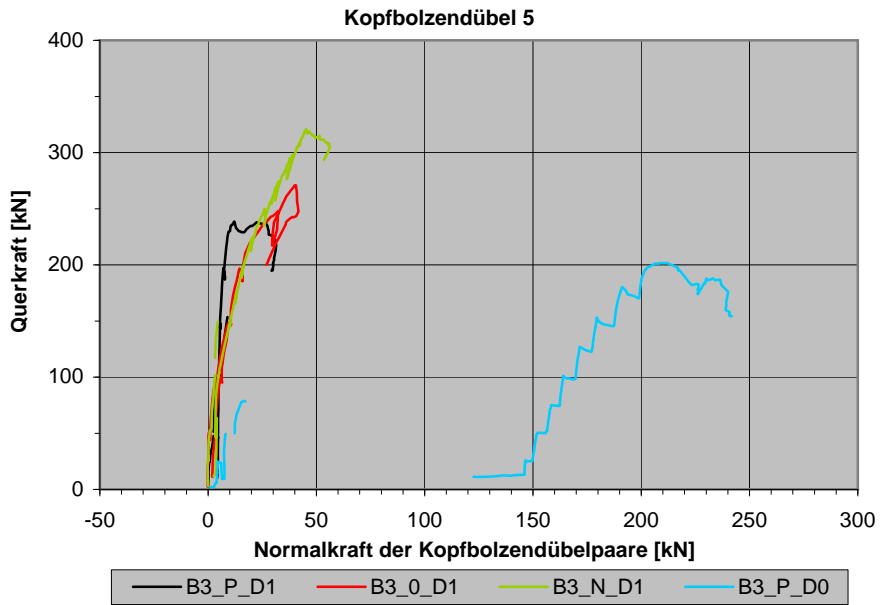




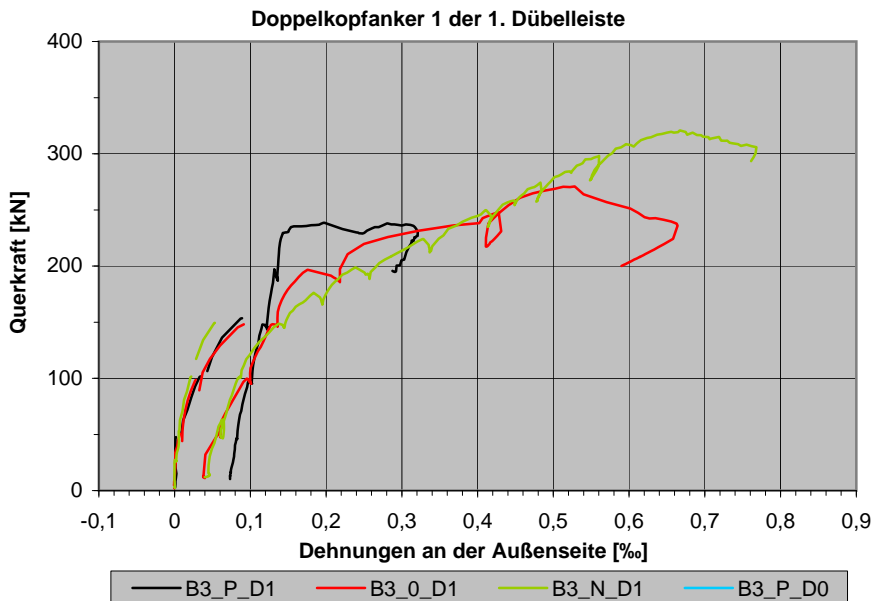
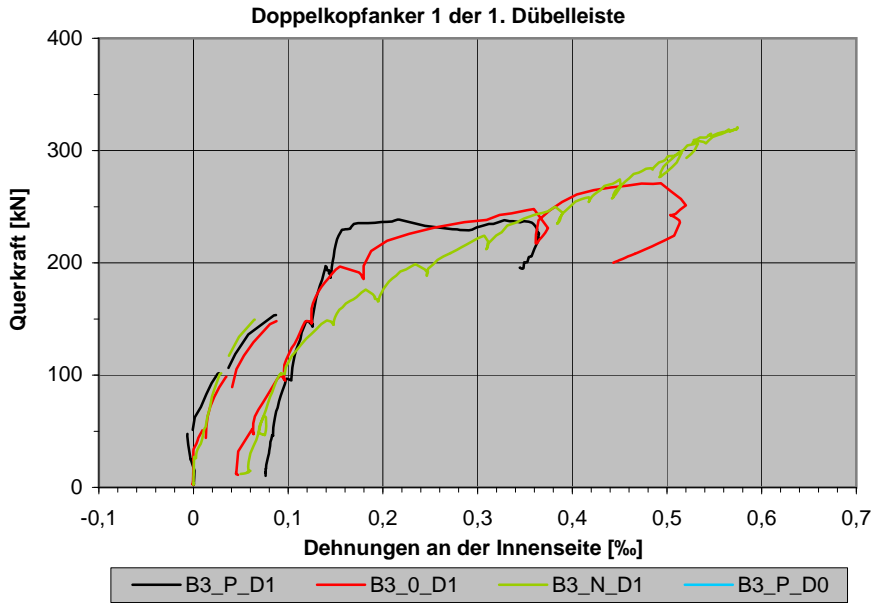


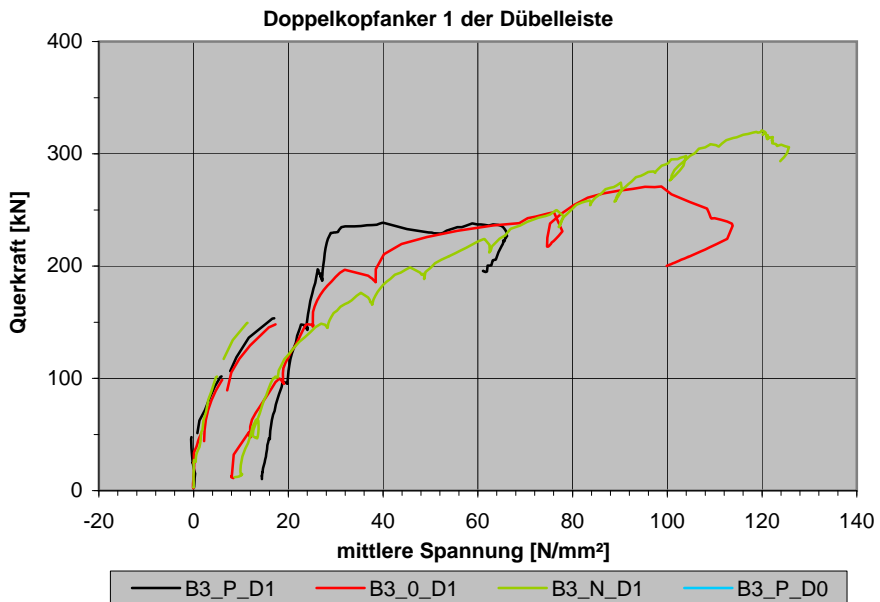
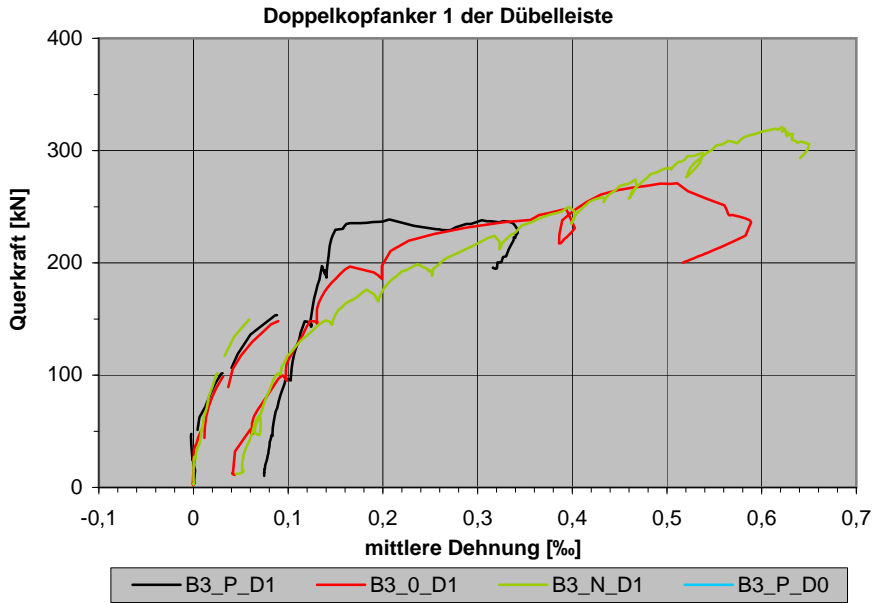


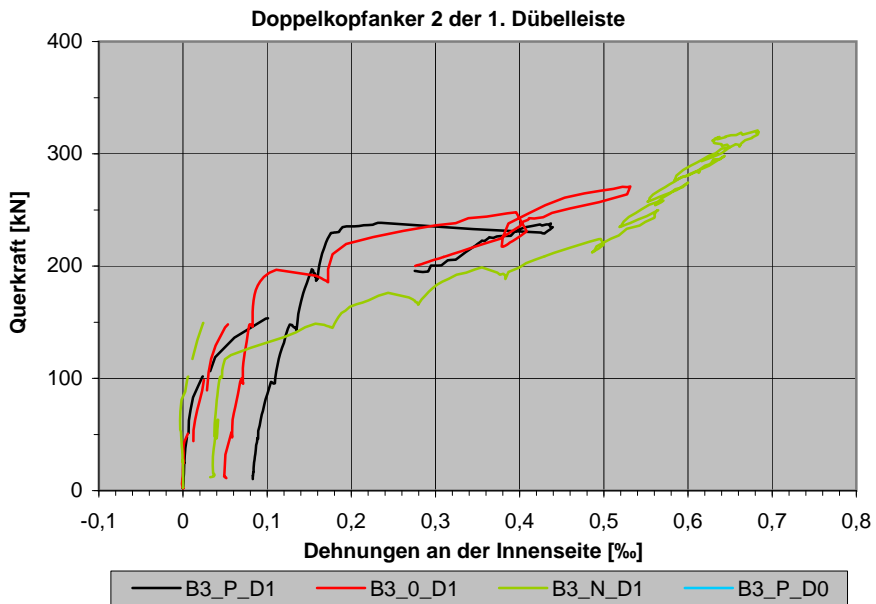
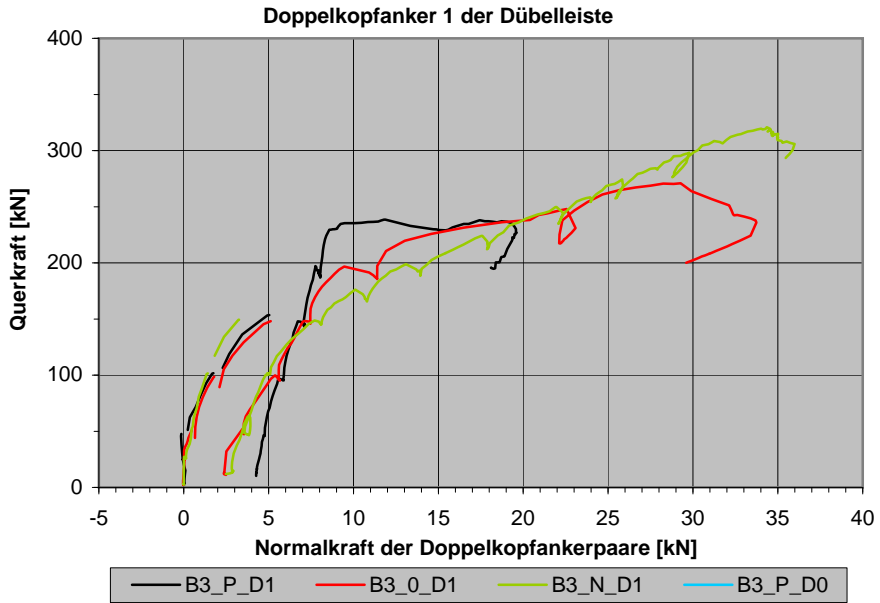


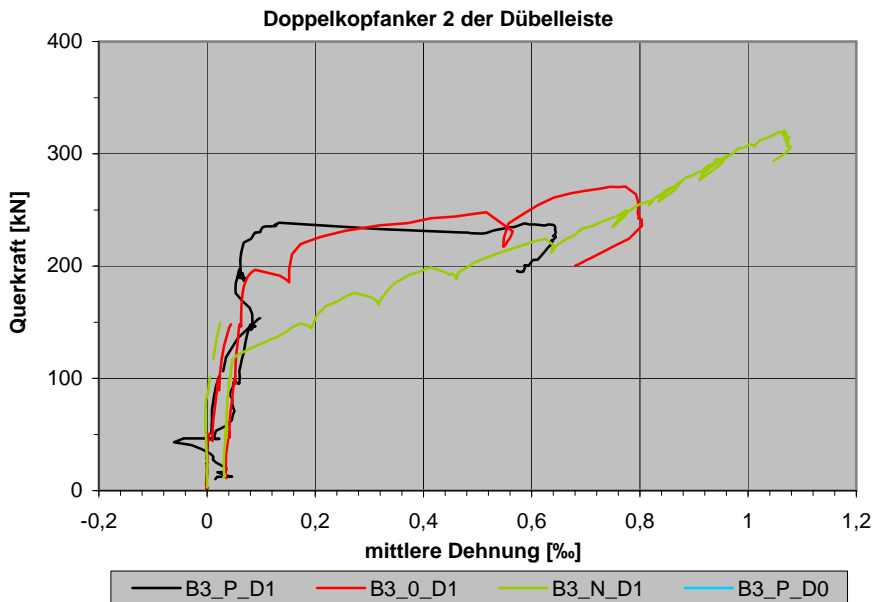
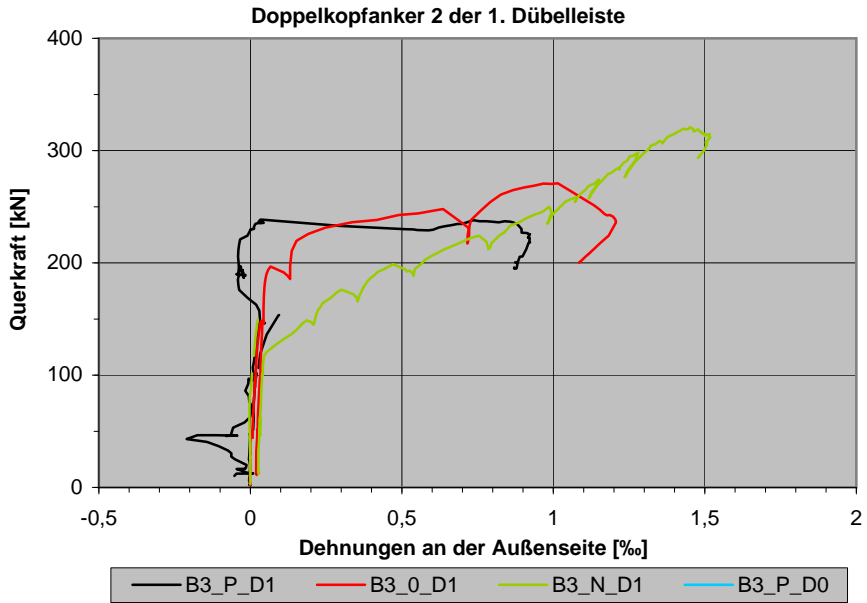


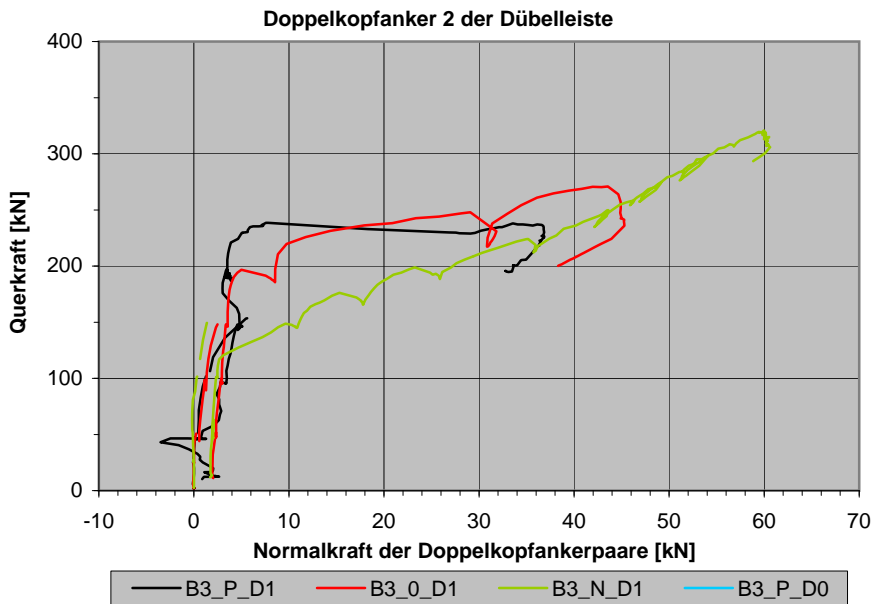
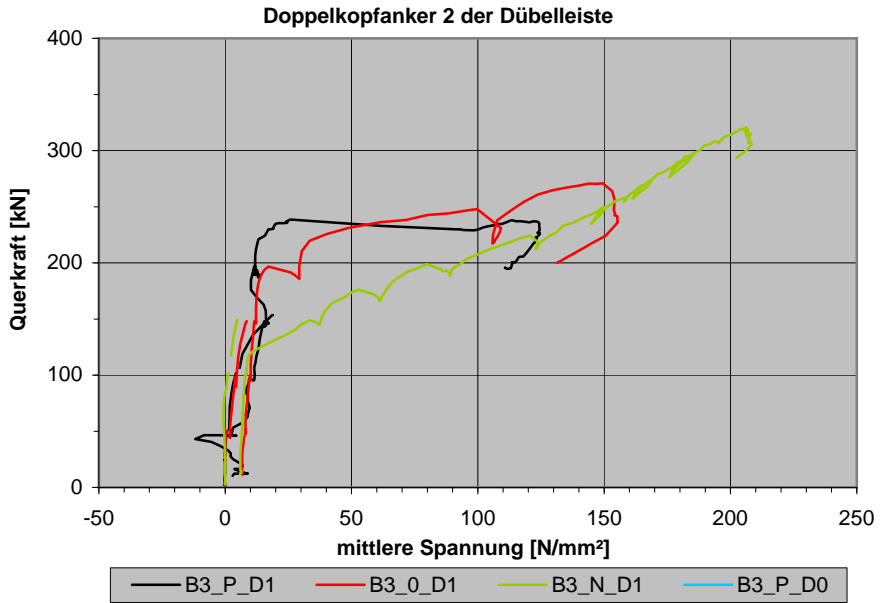
C.3.4. Doppelkopfkanker der ersten Dübelleiste

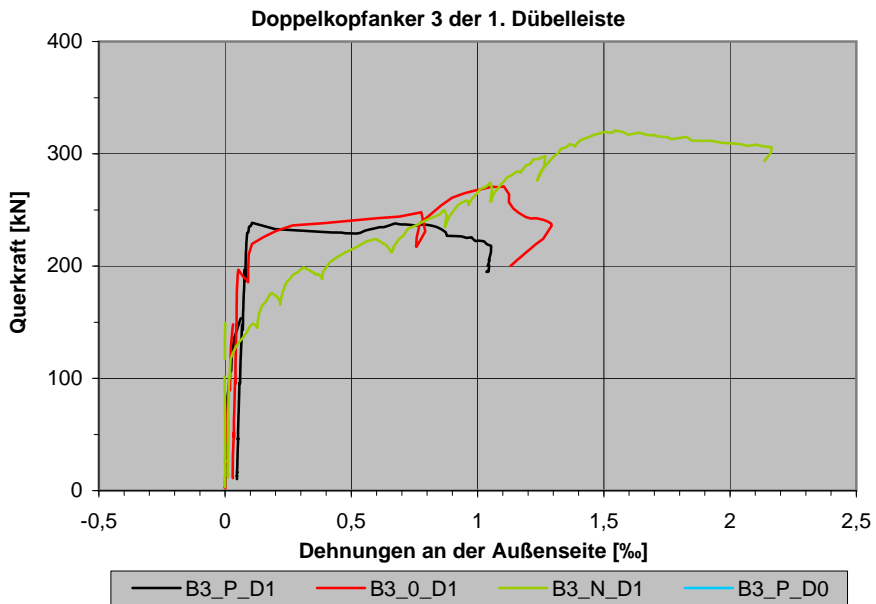
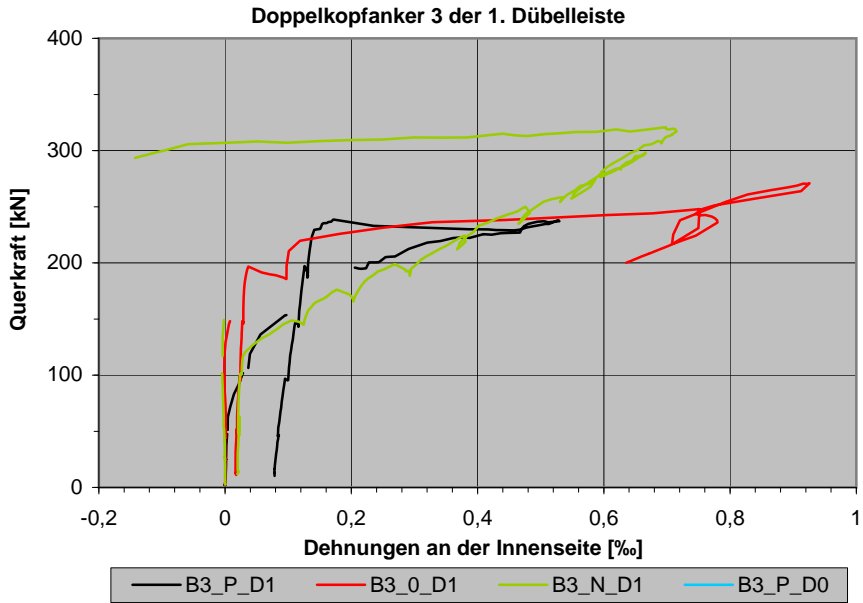


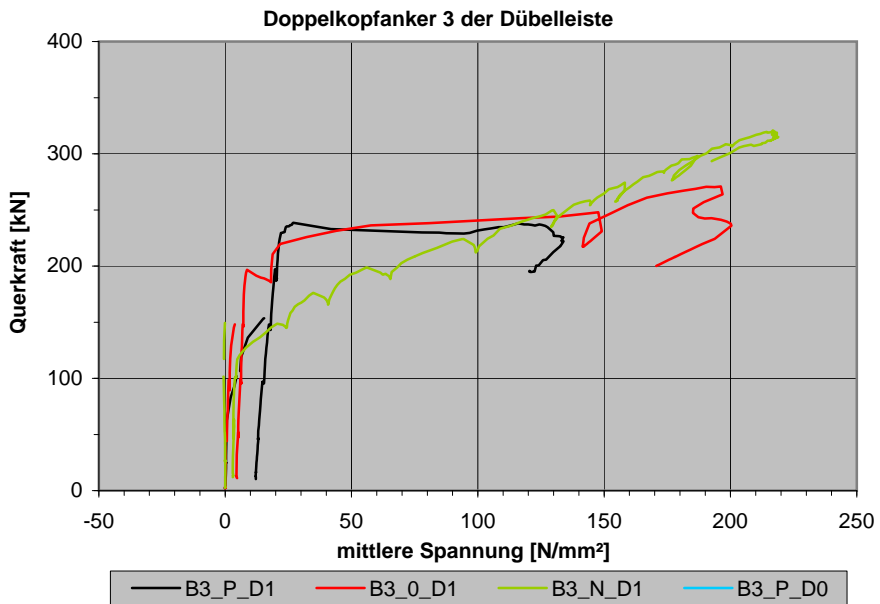
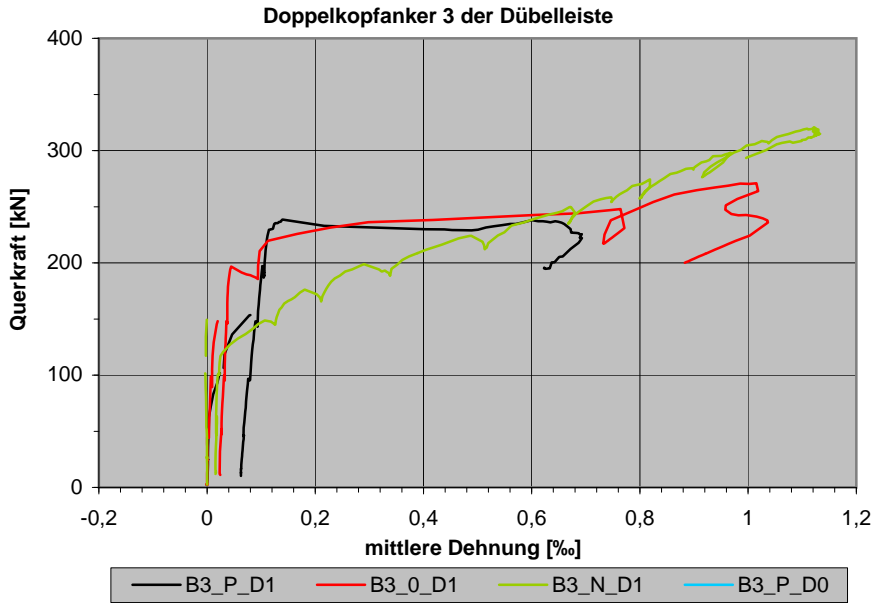


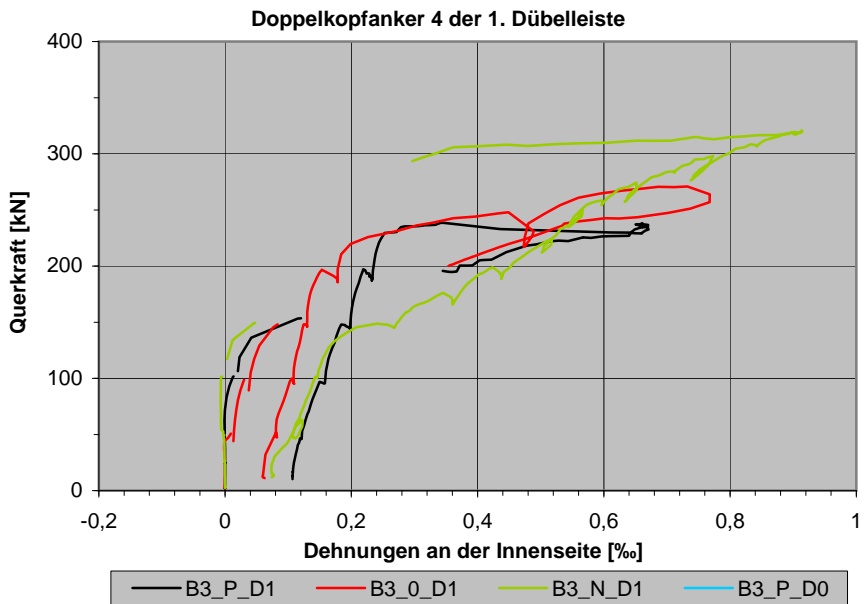
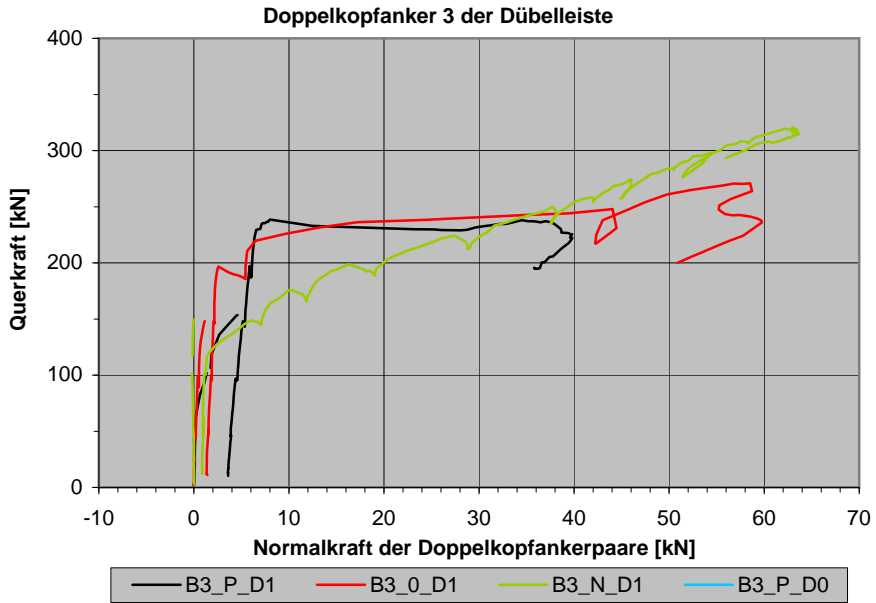


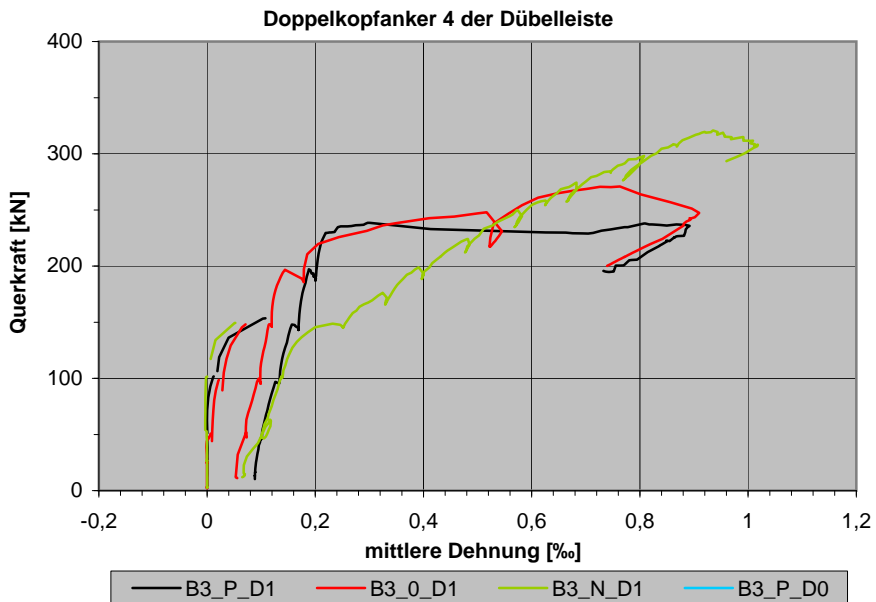
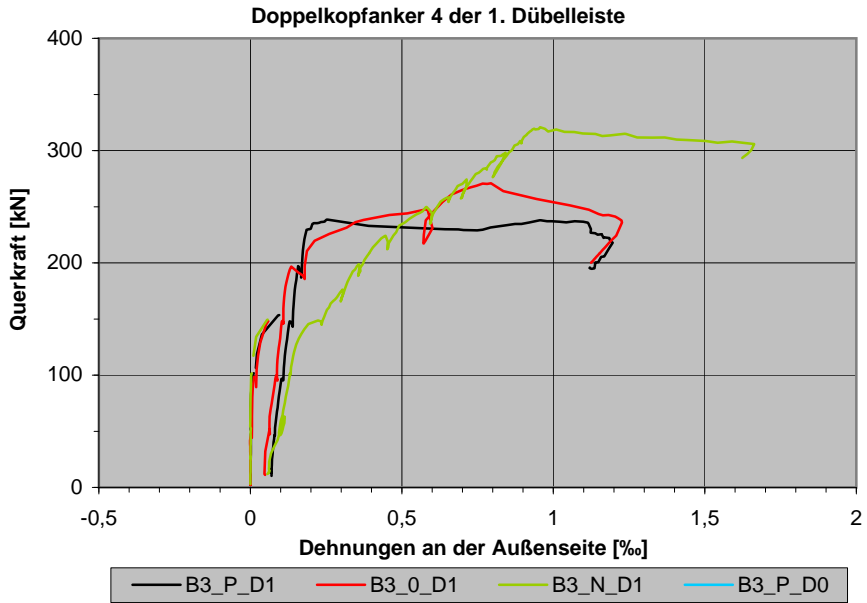


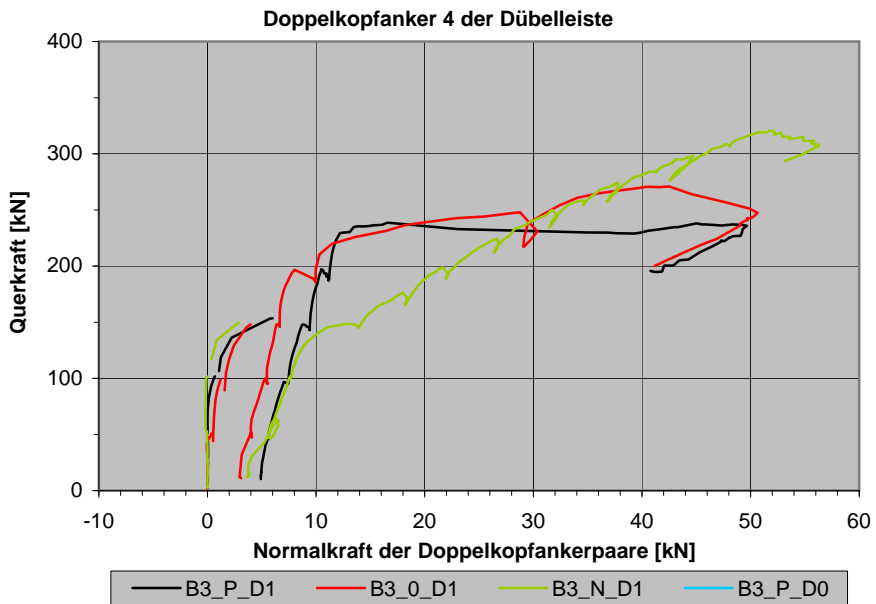
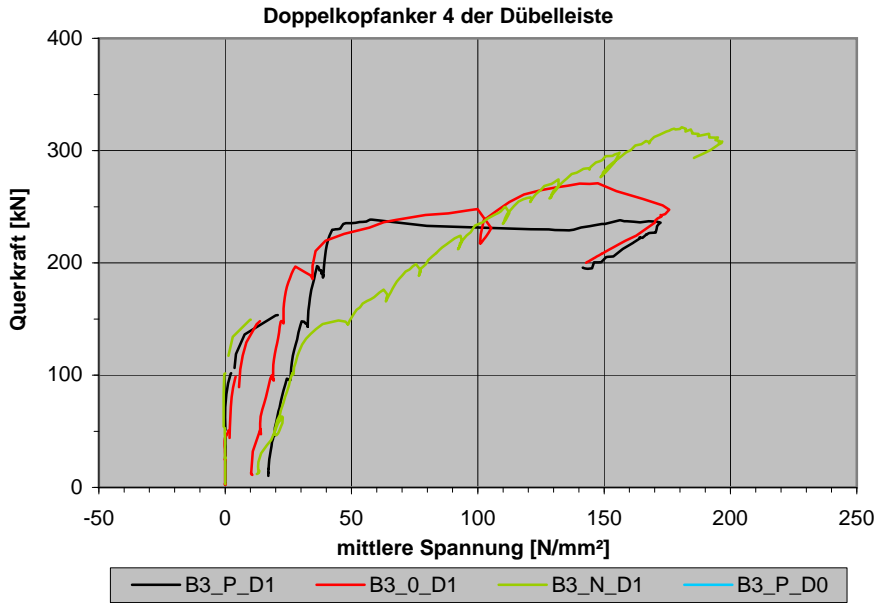


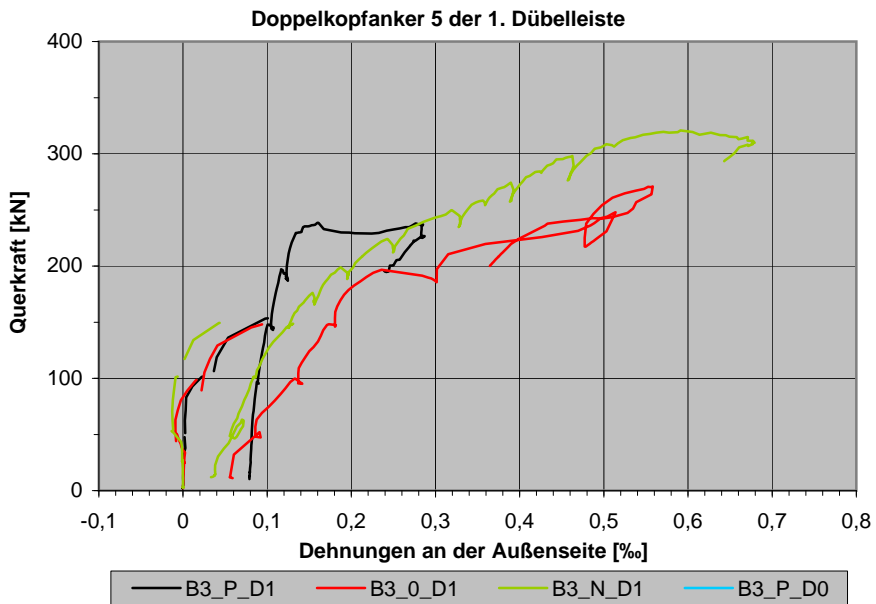
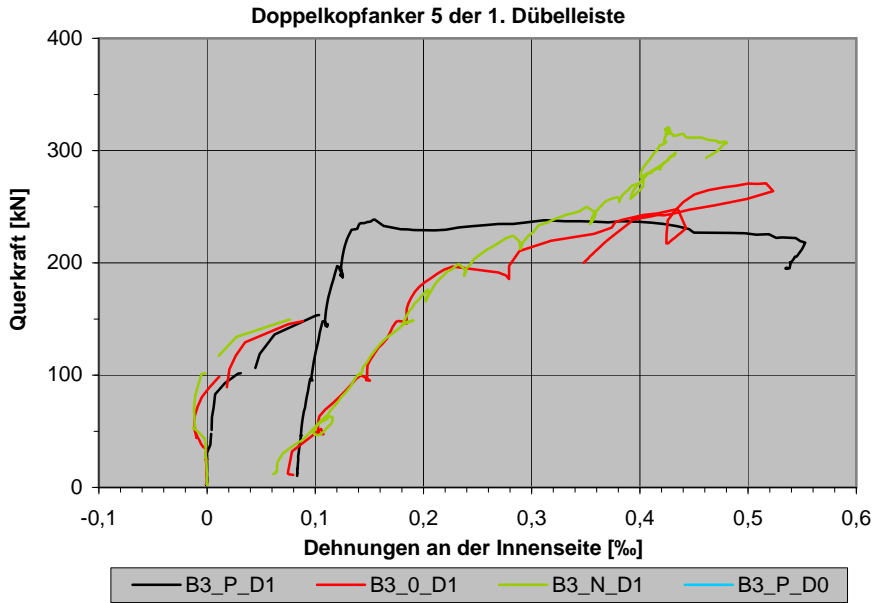


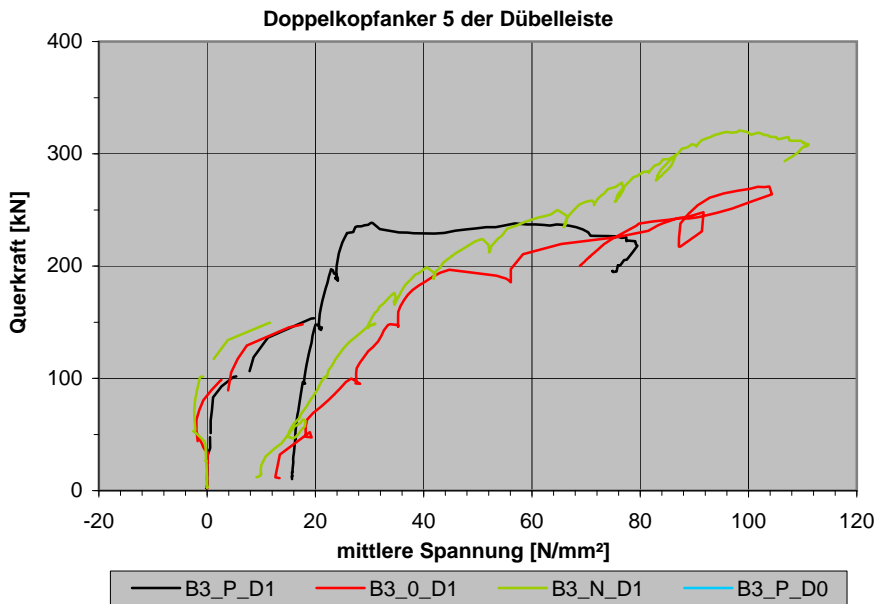
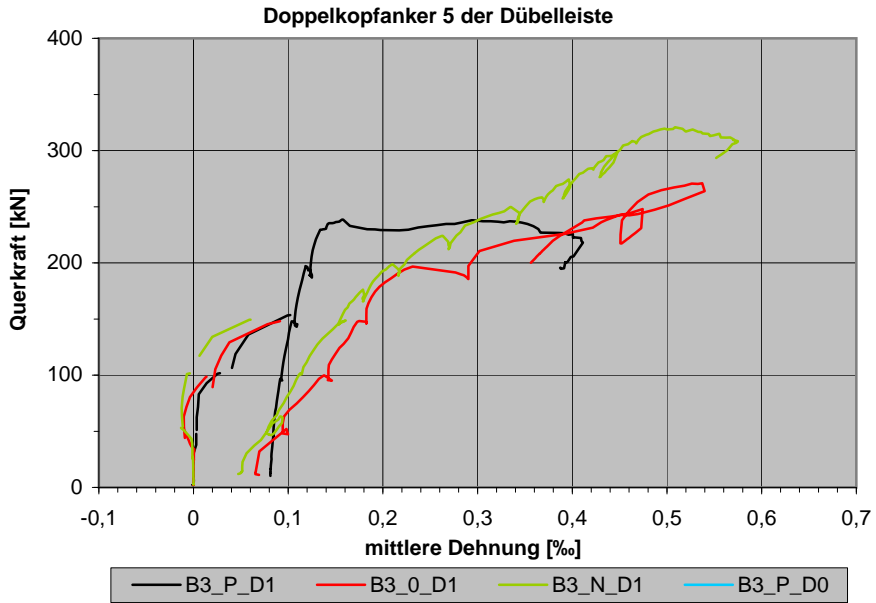


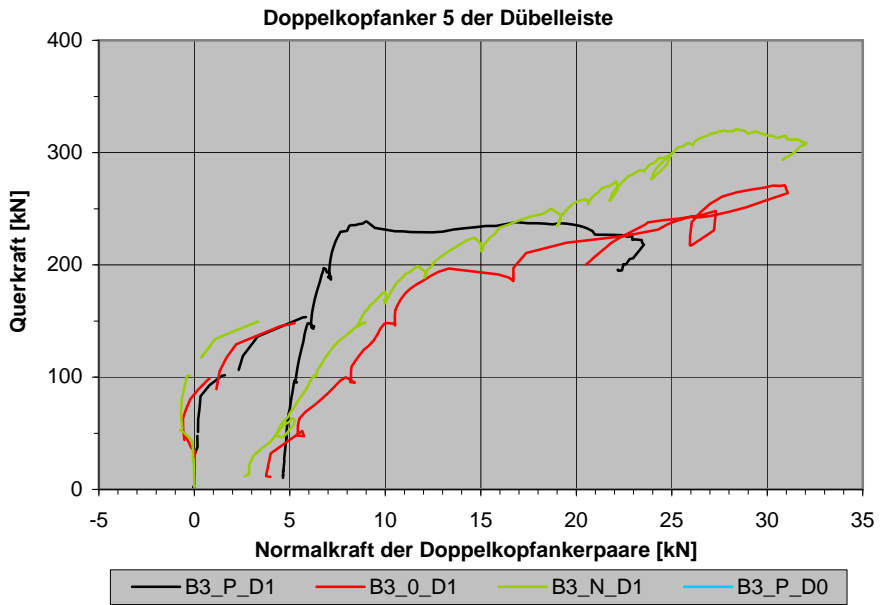




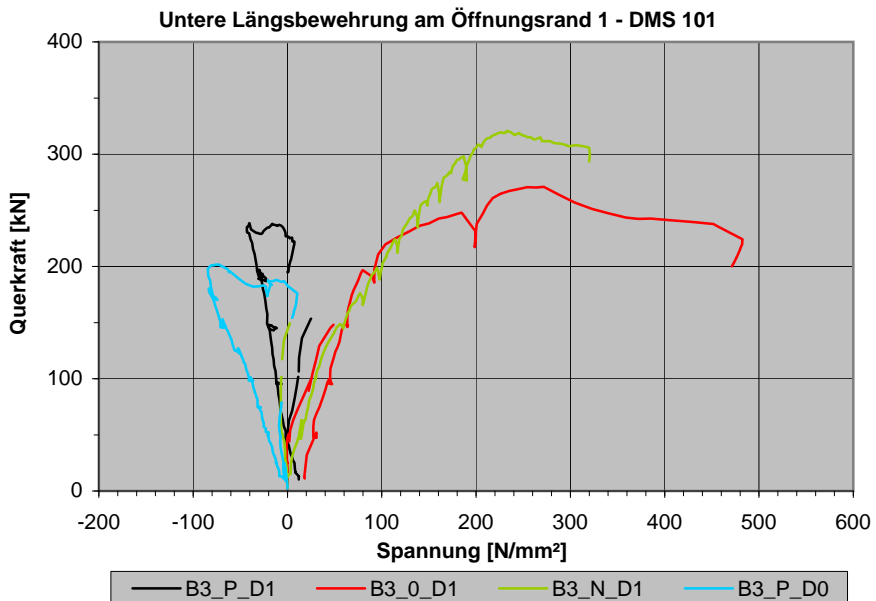
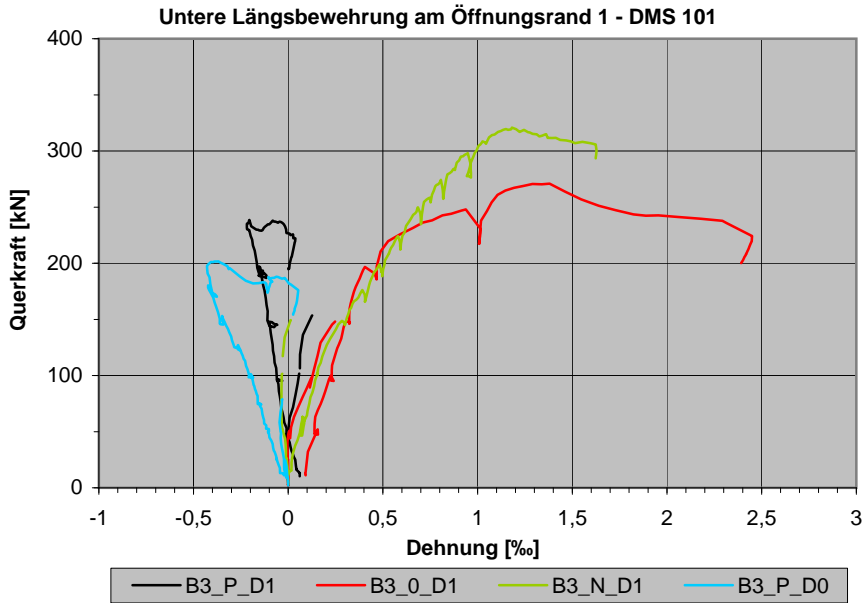


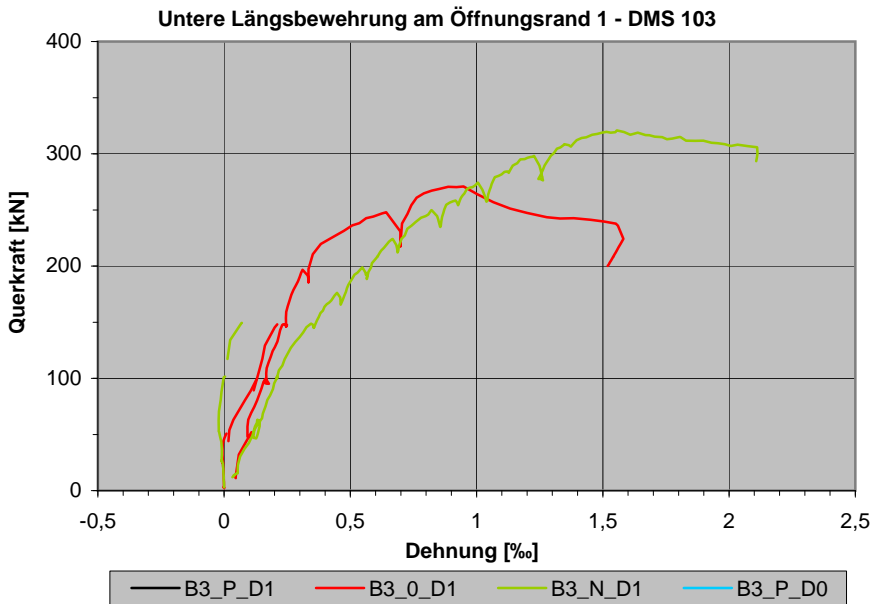
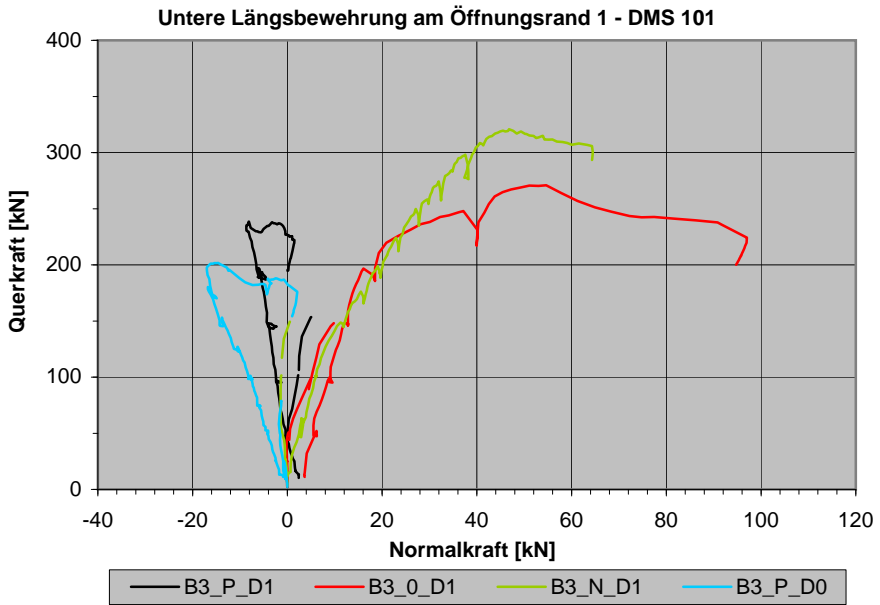


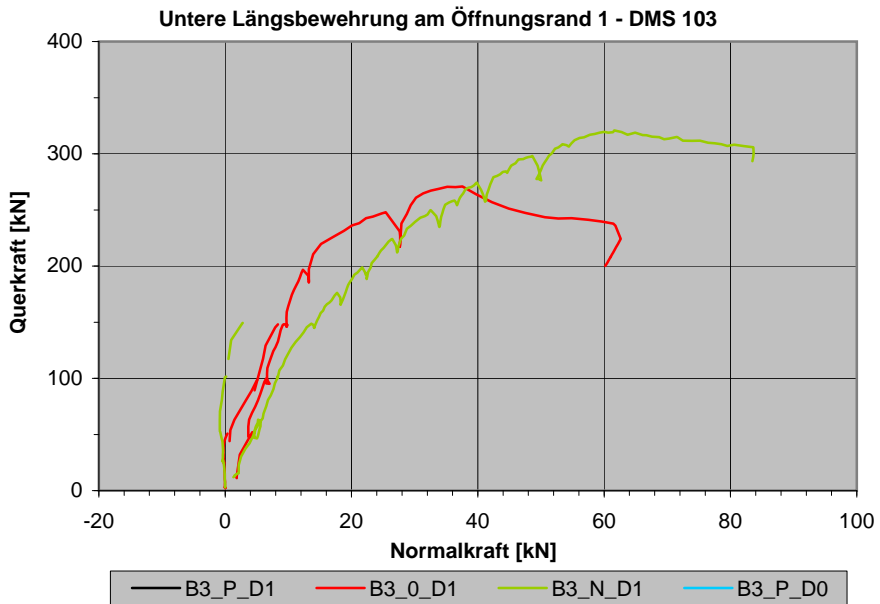
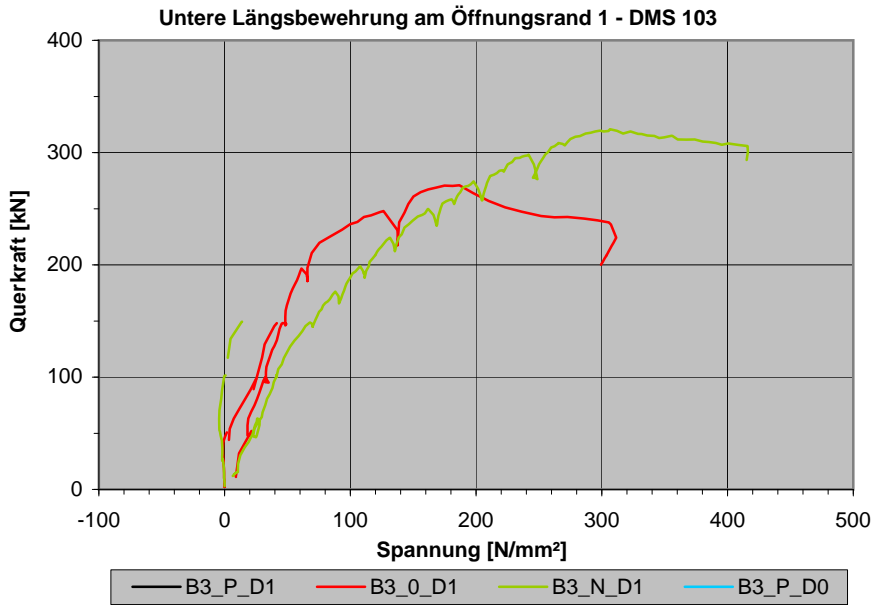


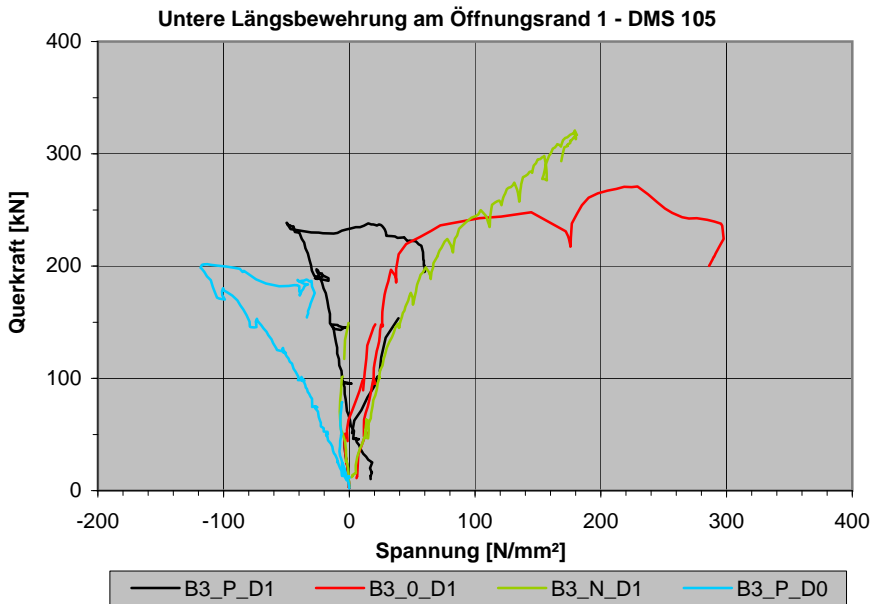
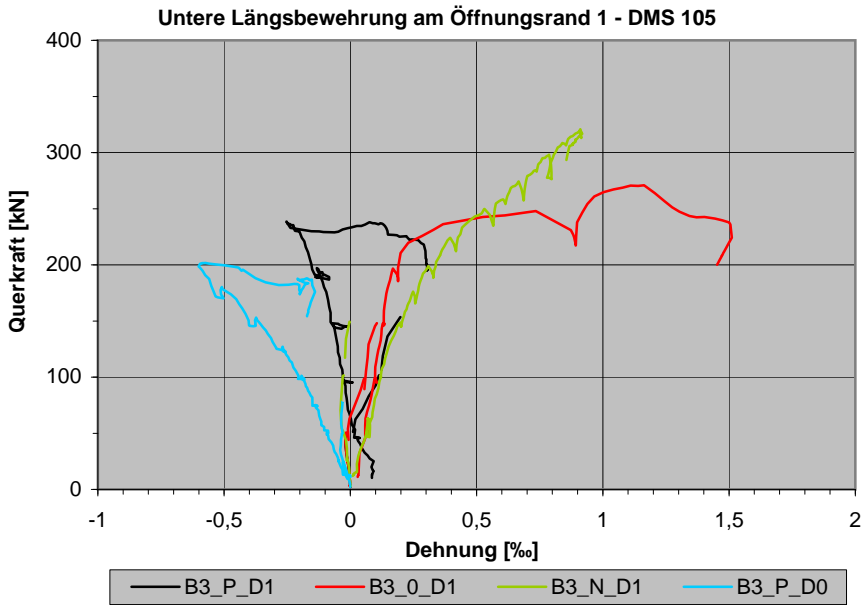


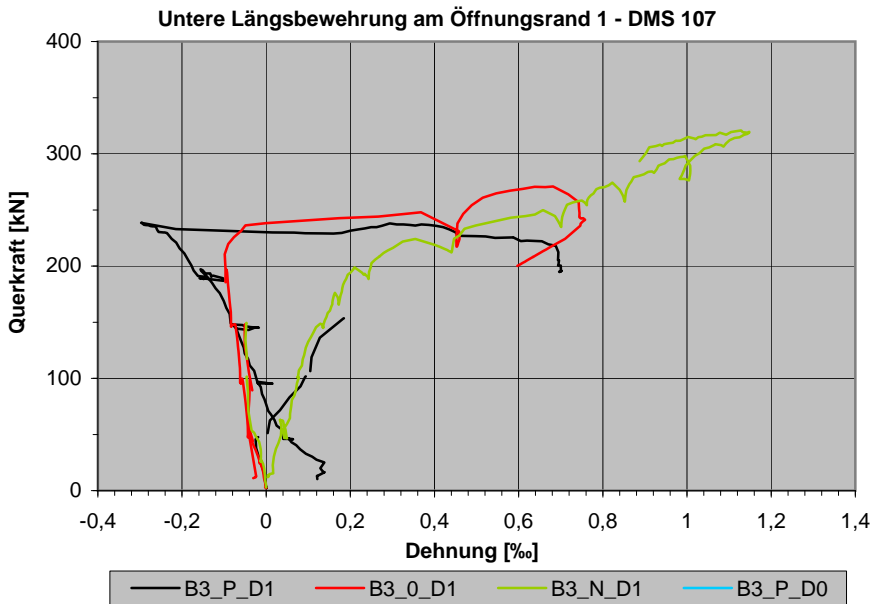
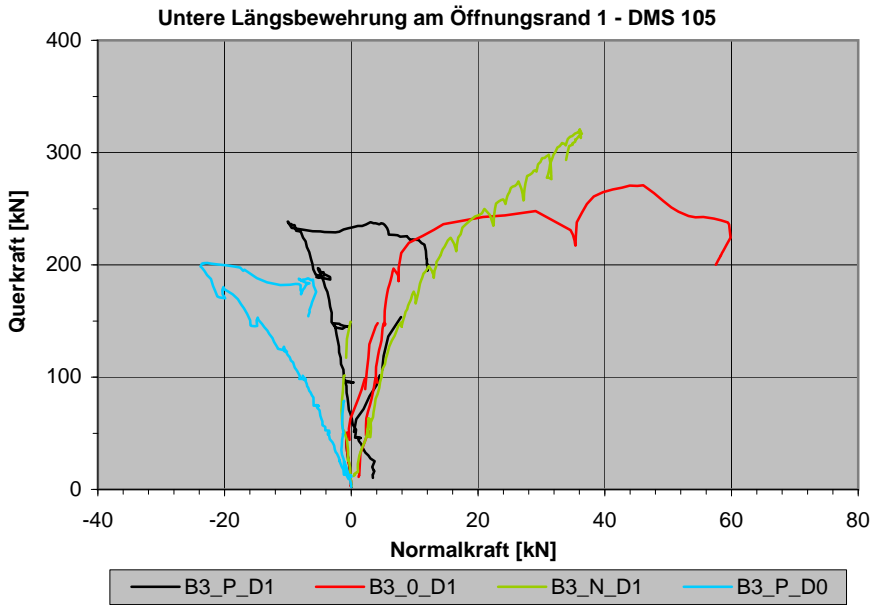
C.3.5. Längsbewehrung

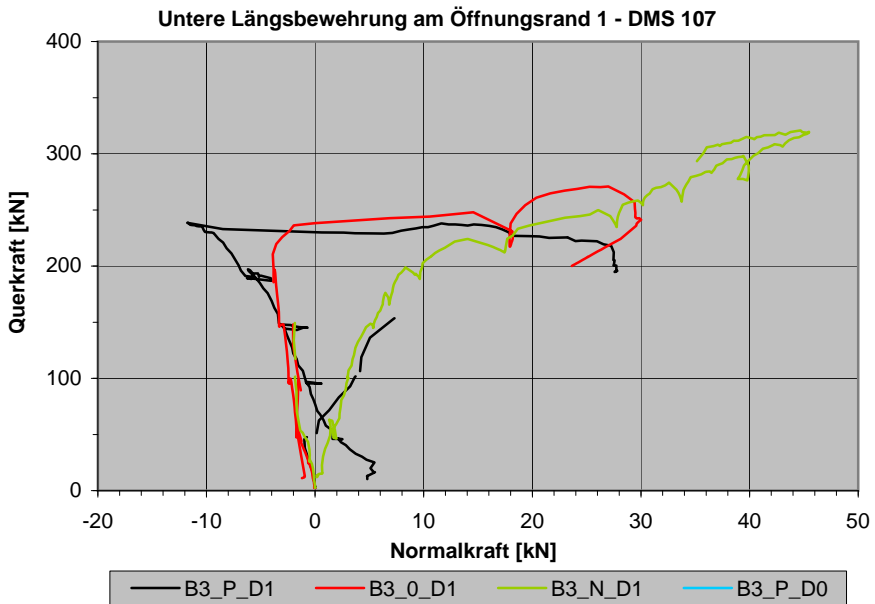
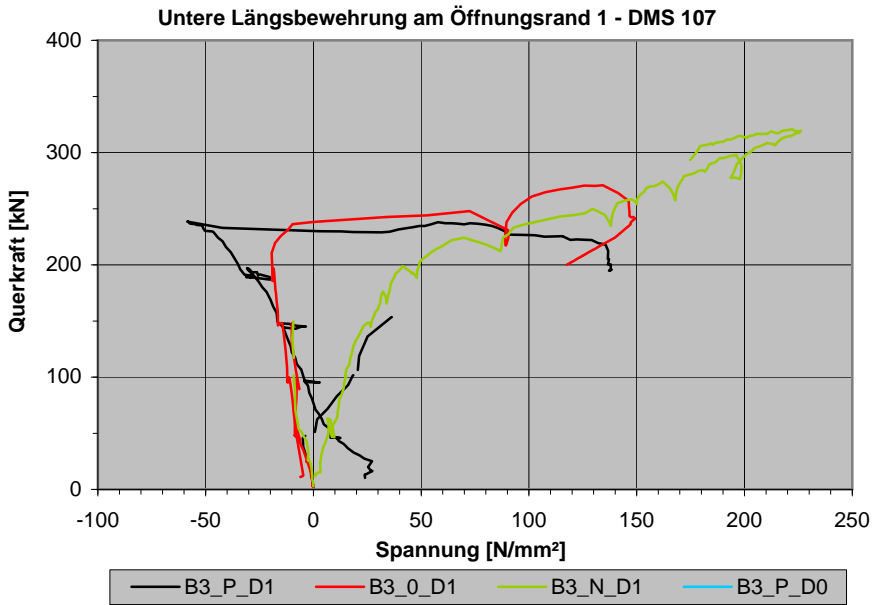


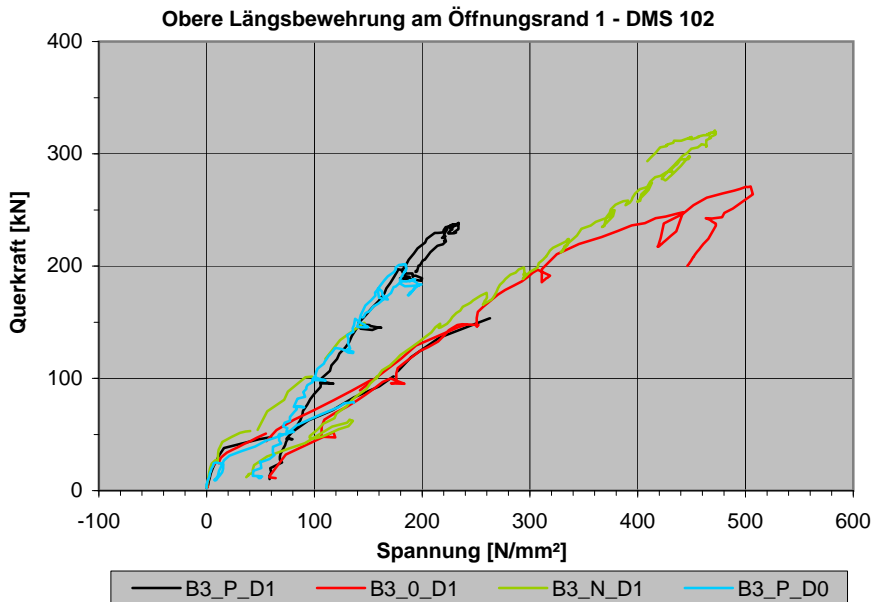
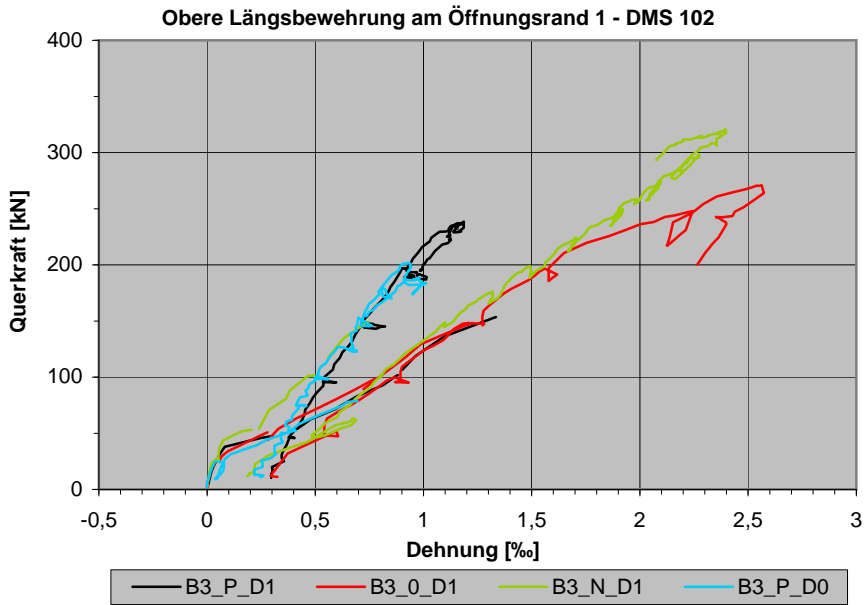


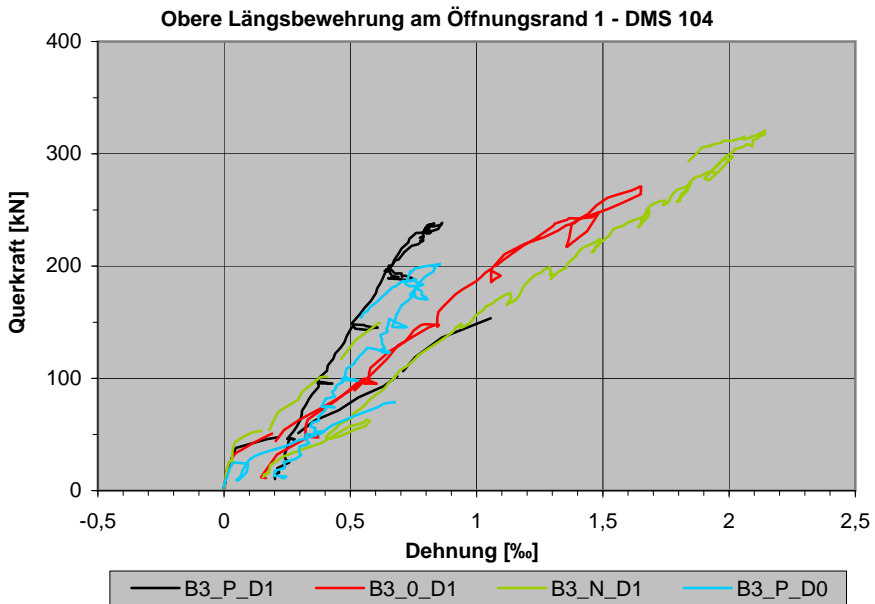
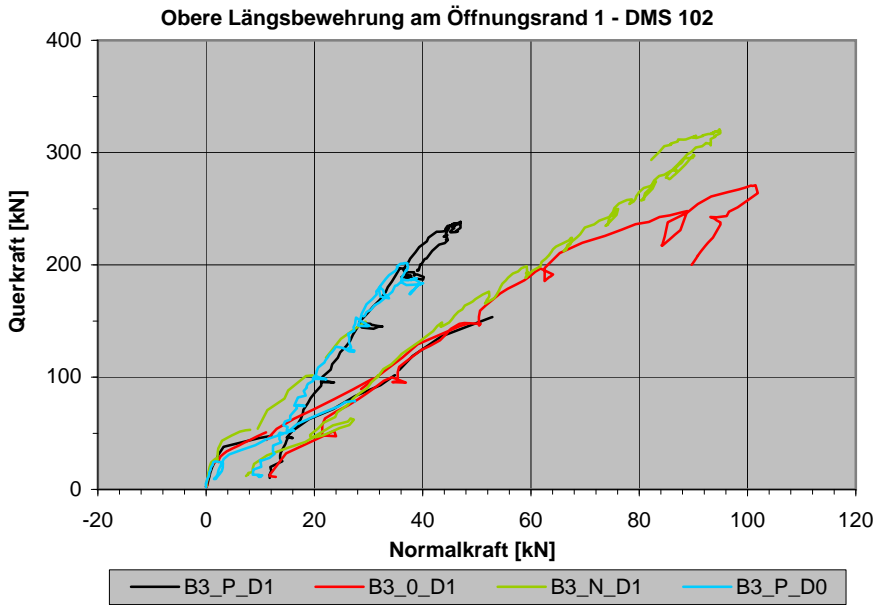


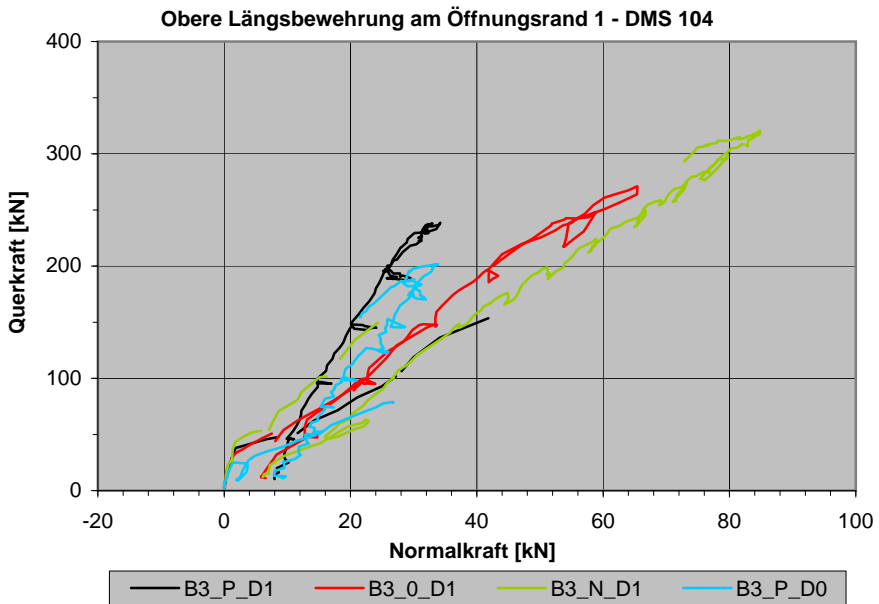
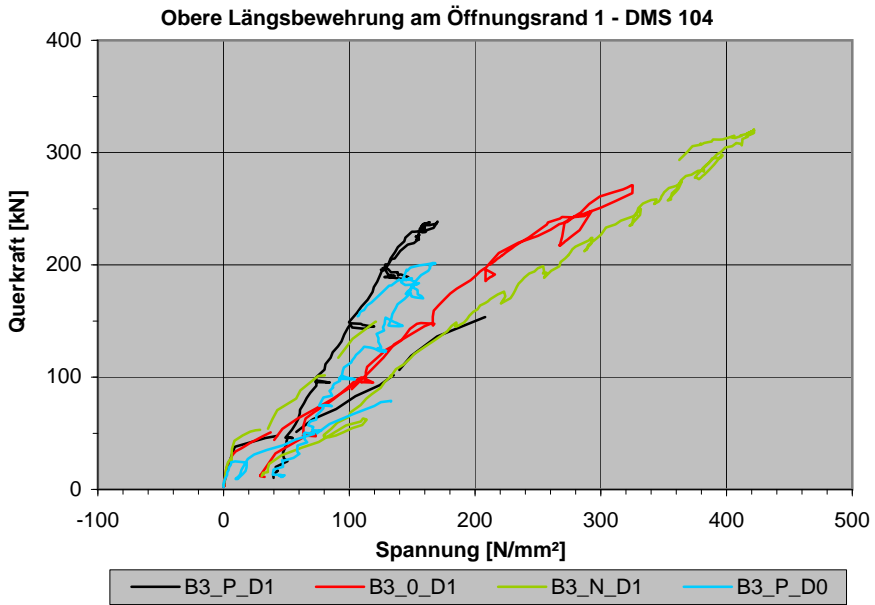


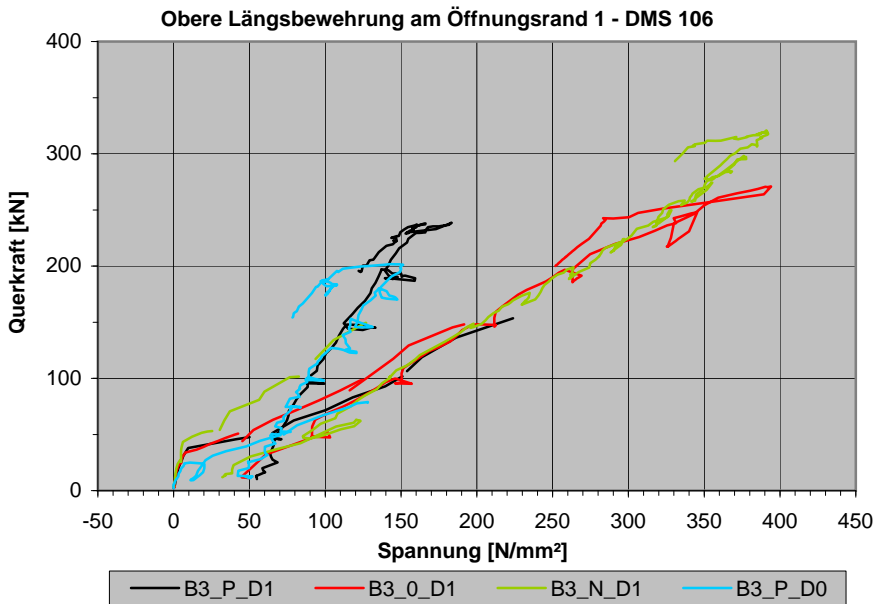
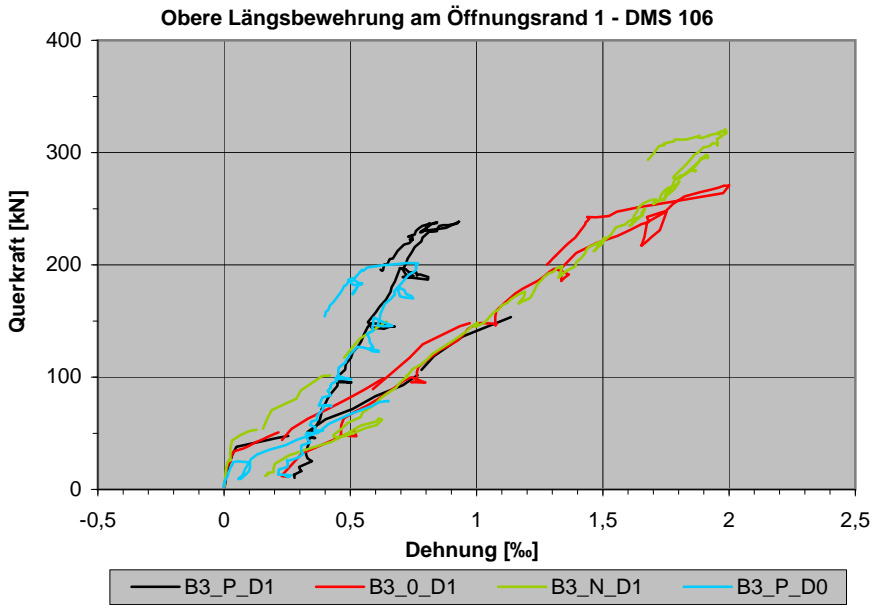


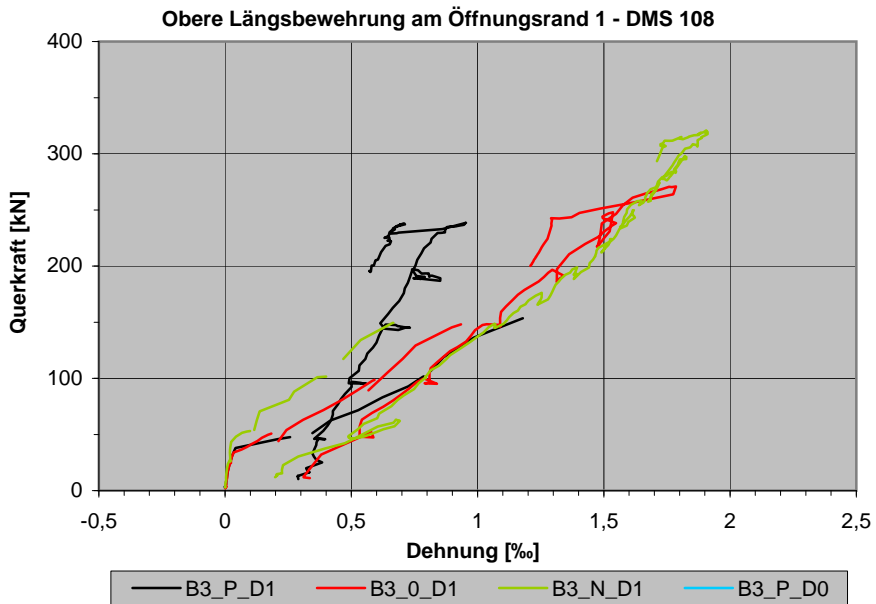
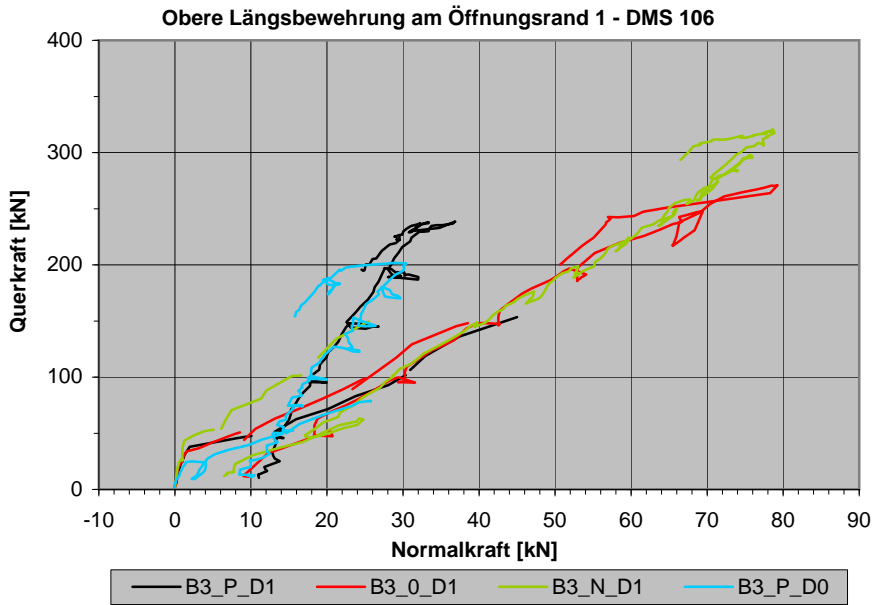


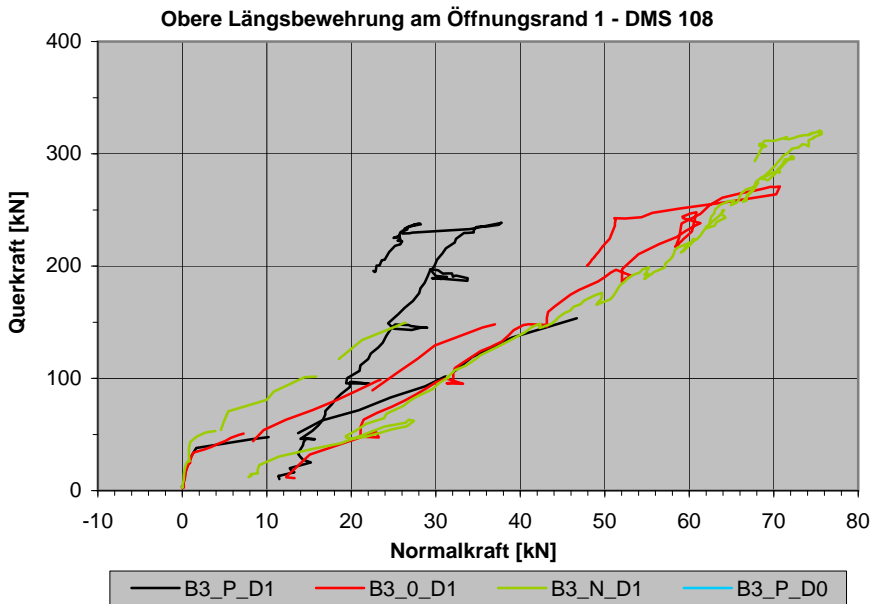
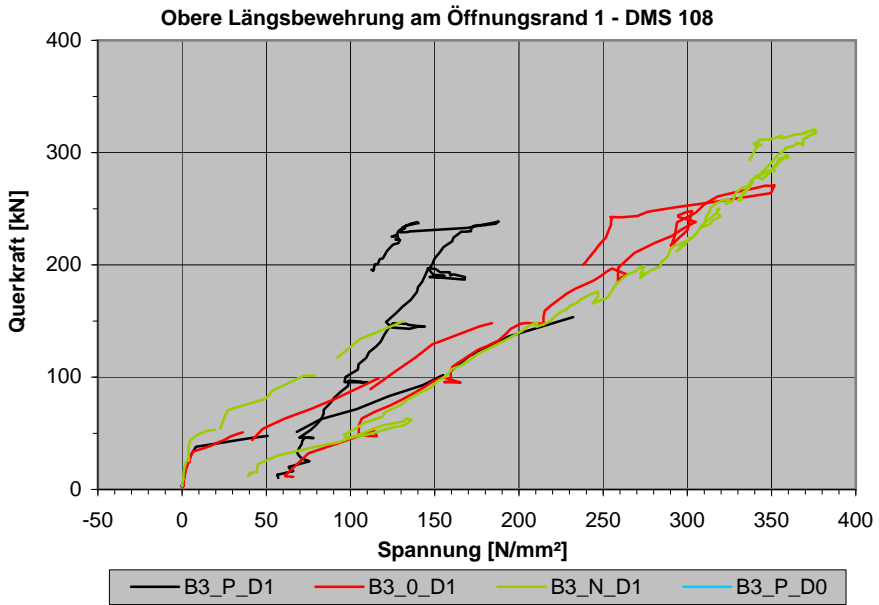


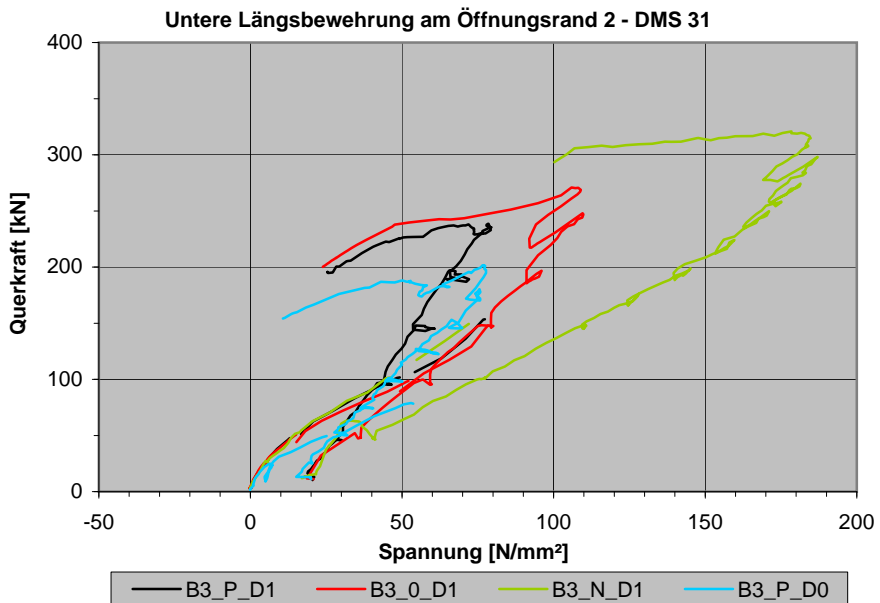
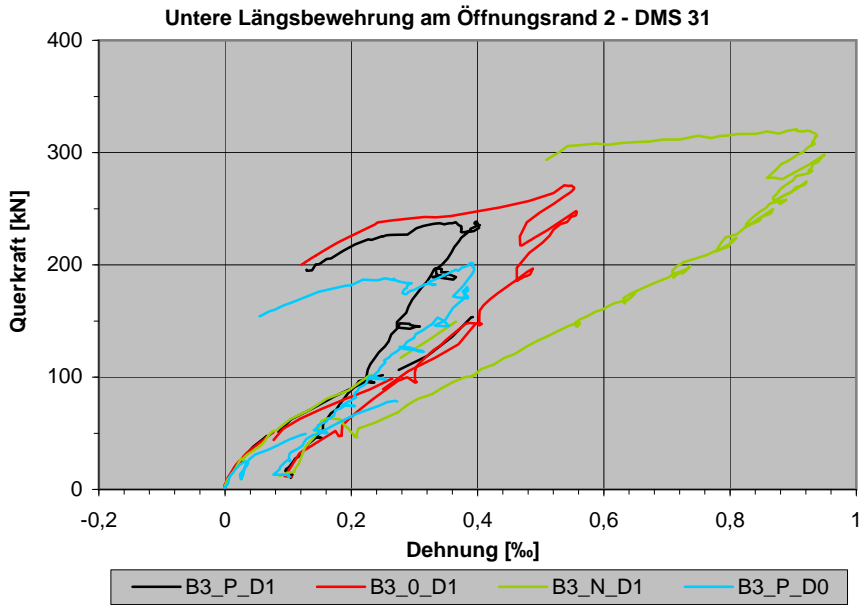


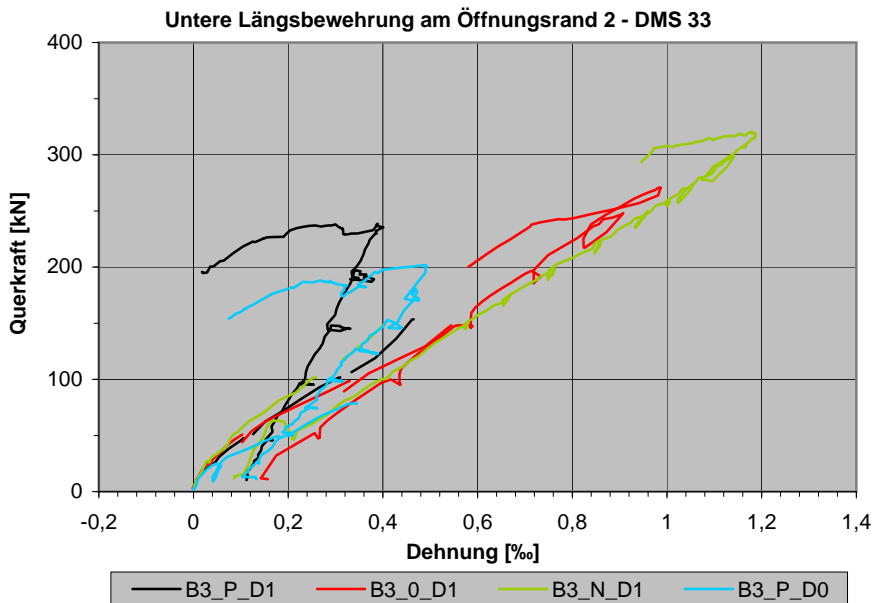
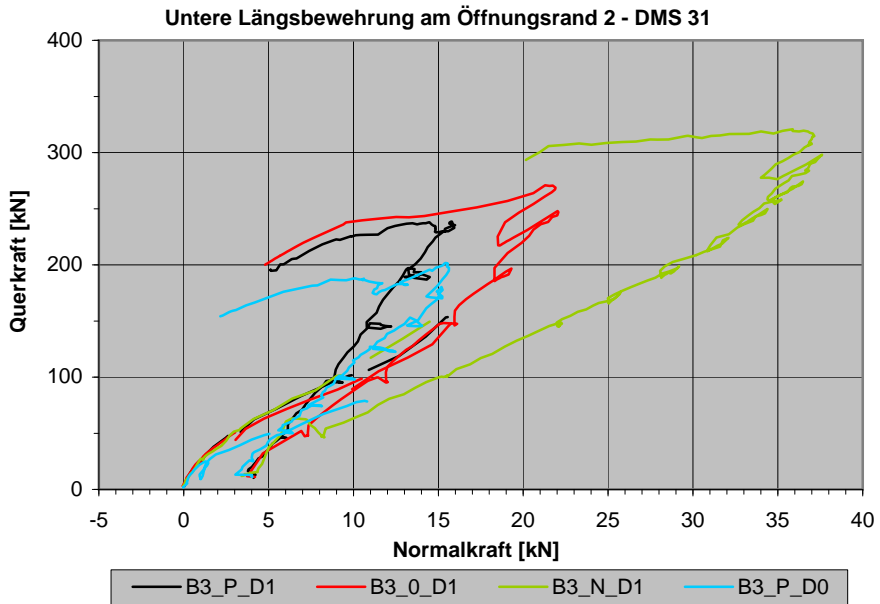


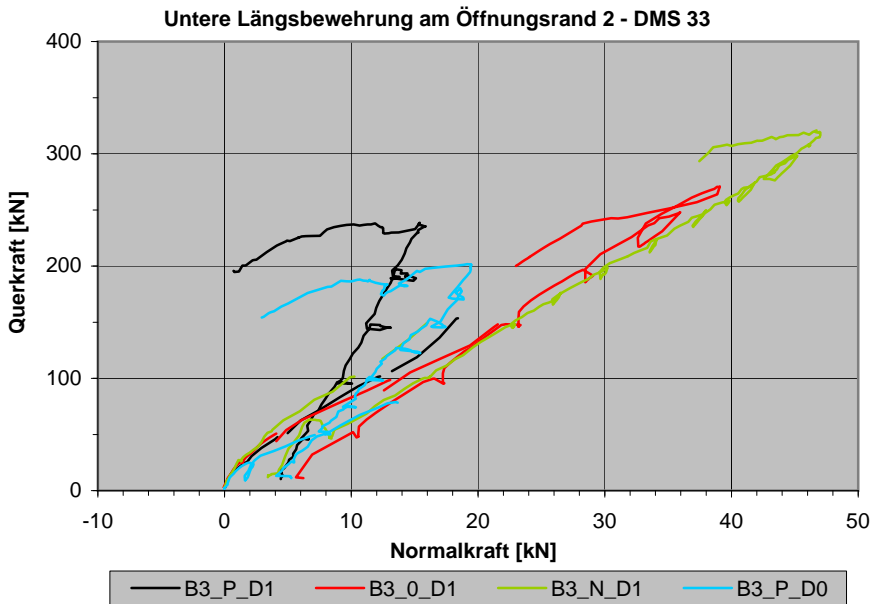
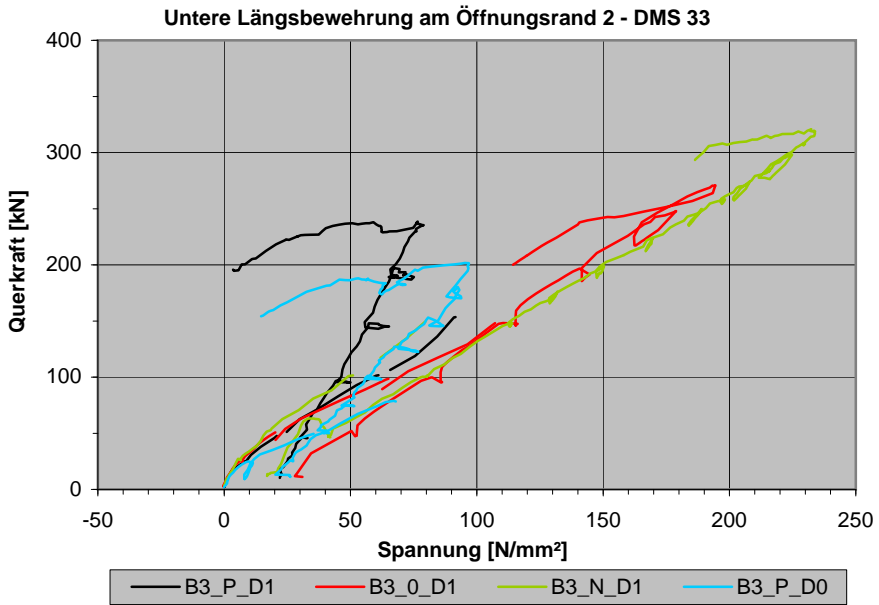


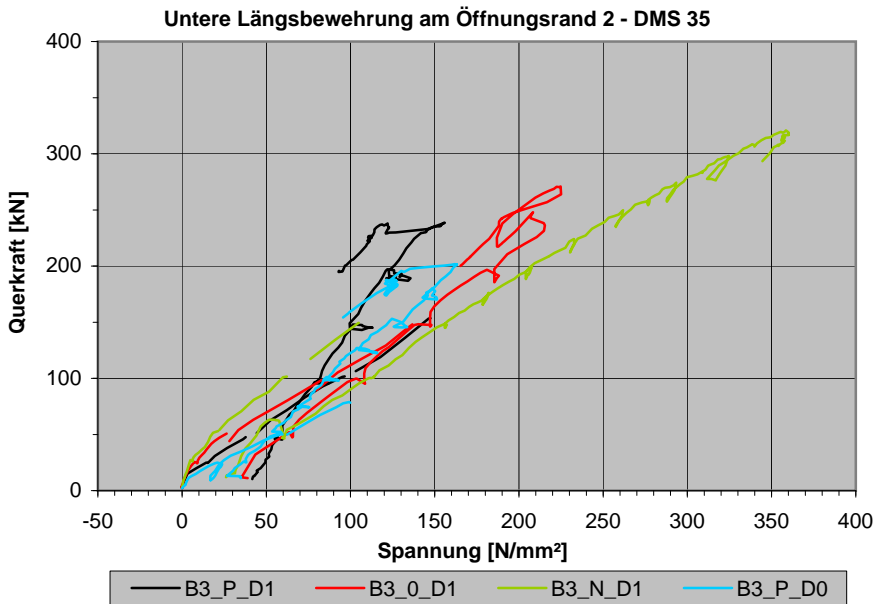
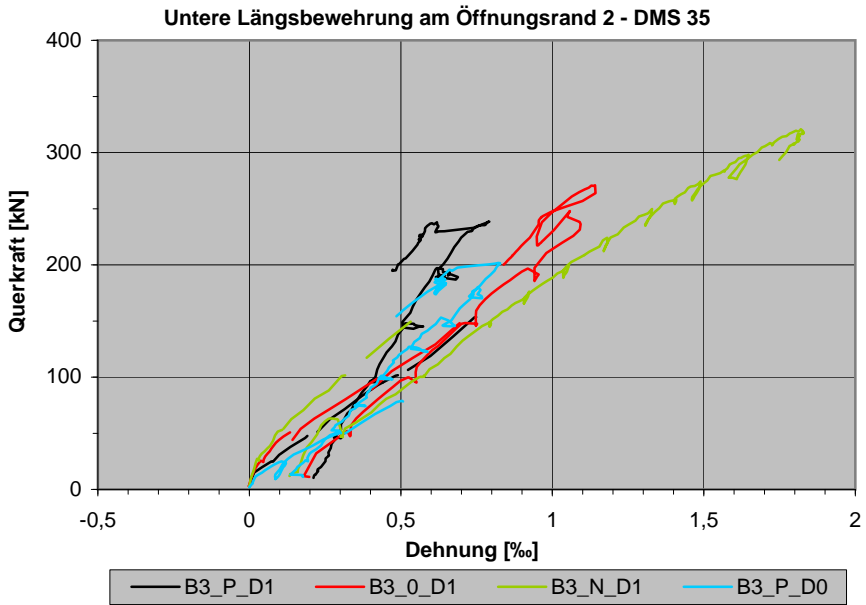


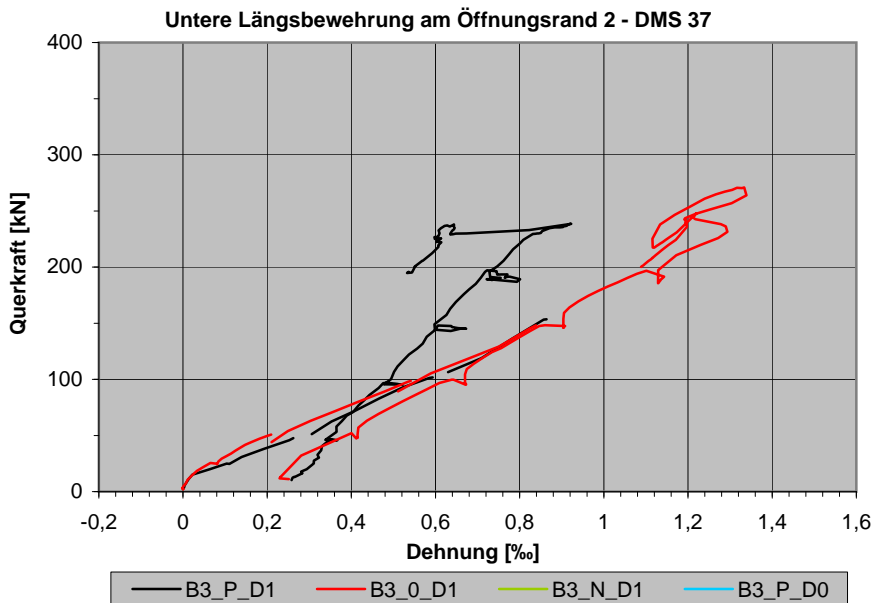
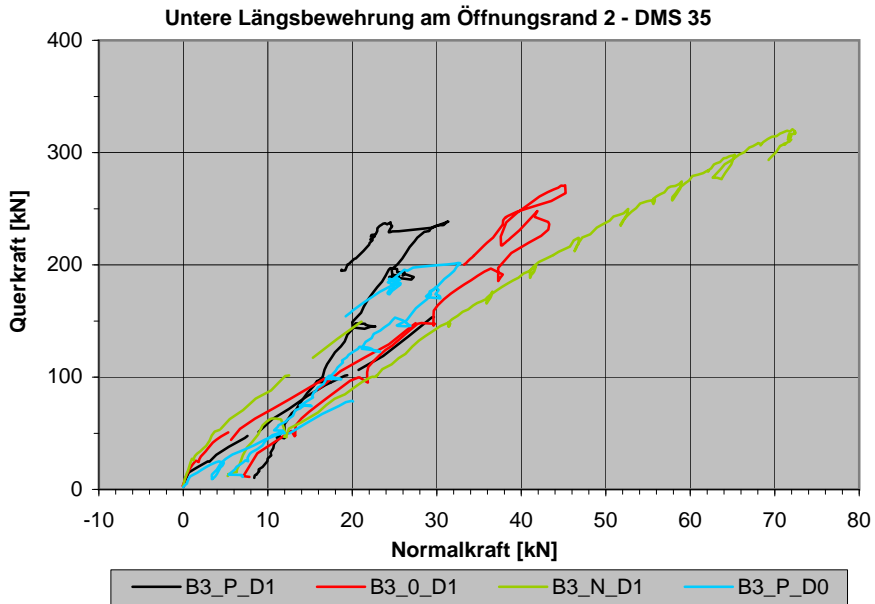


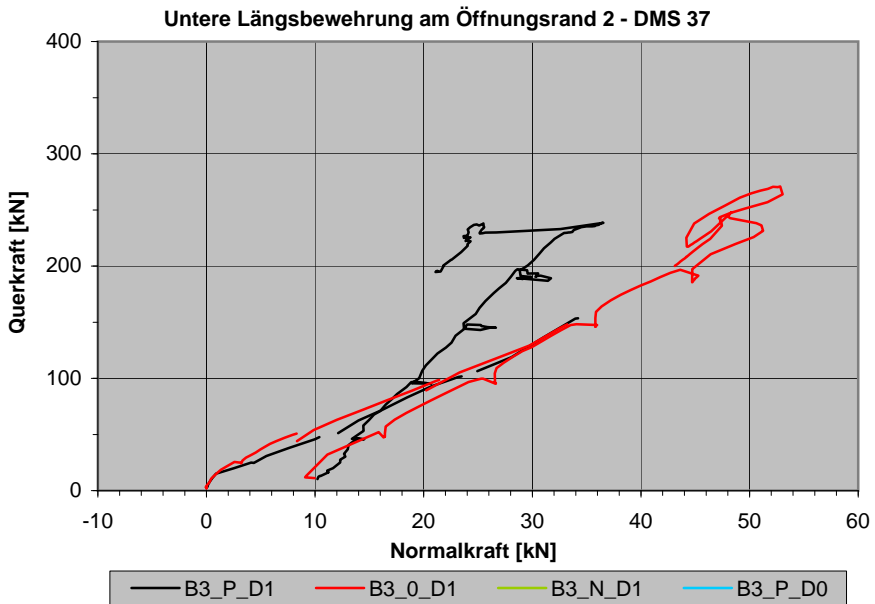
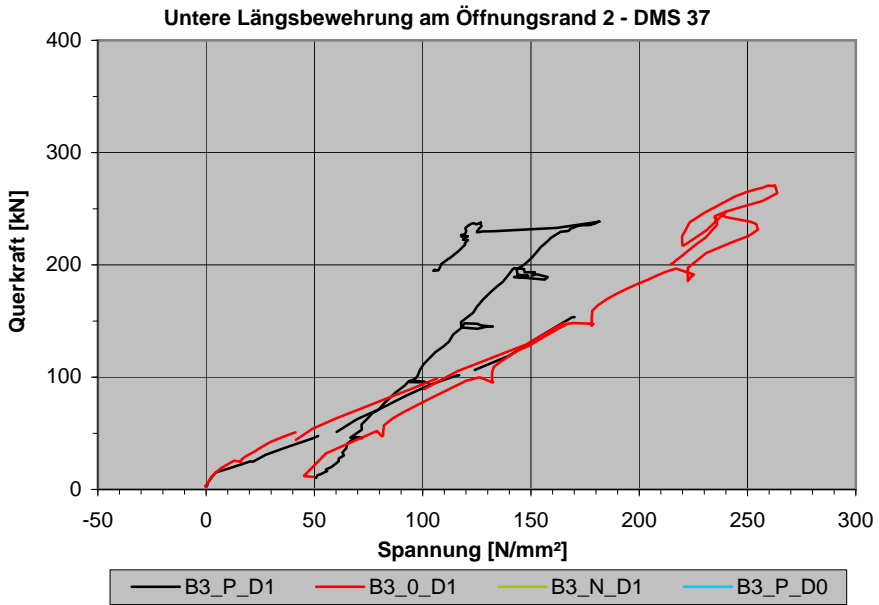


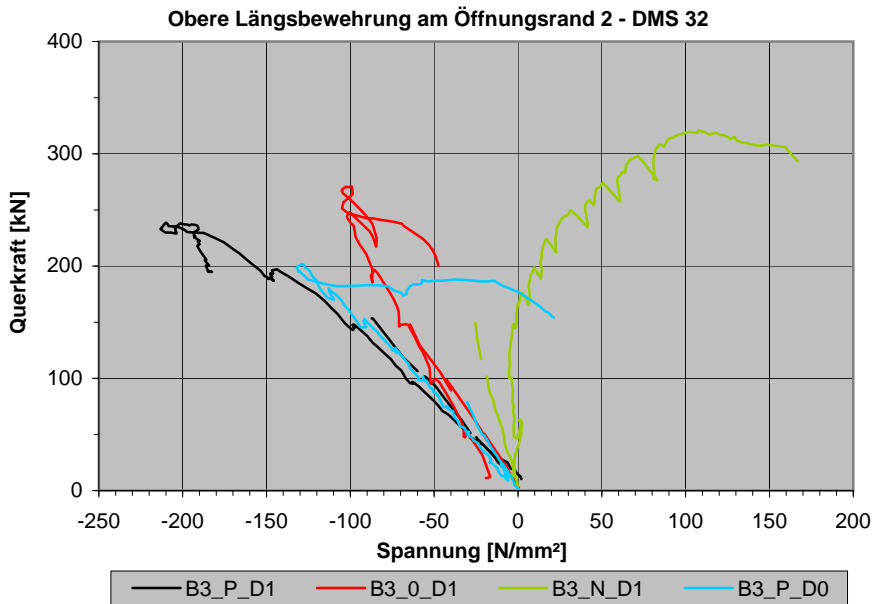
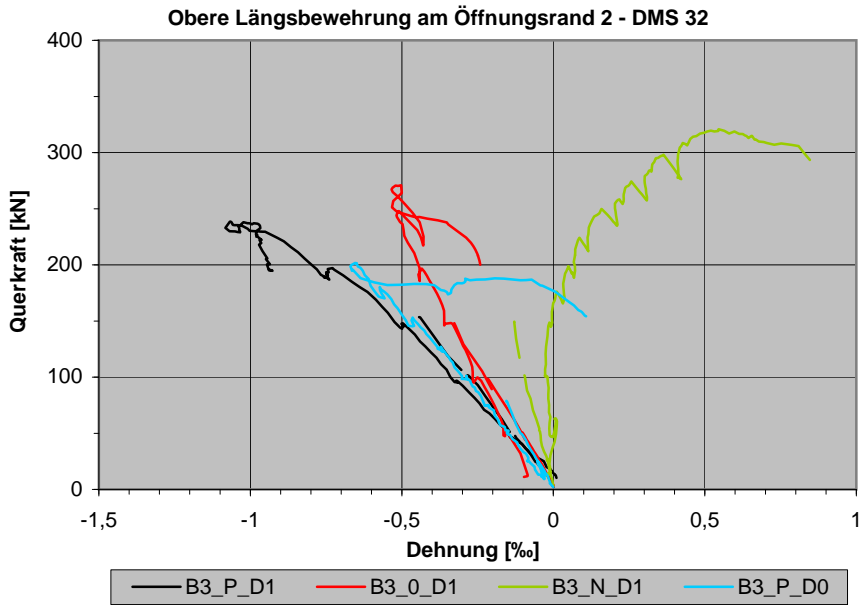


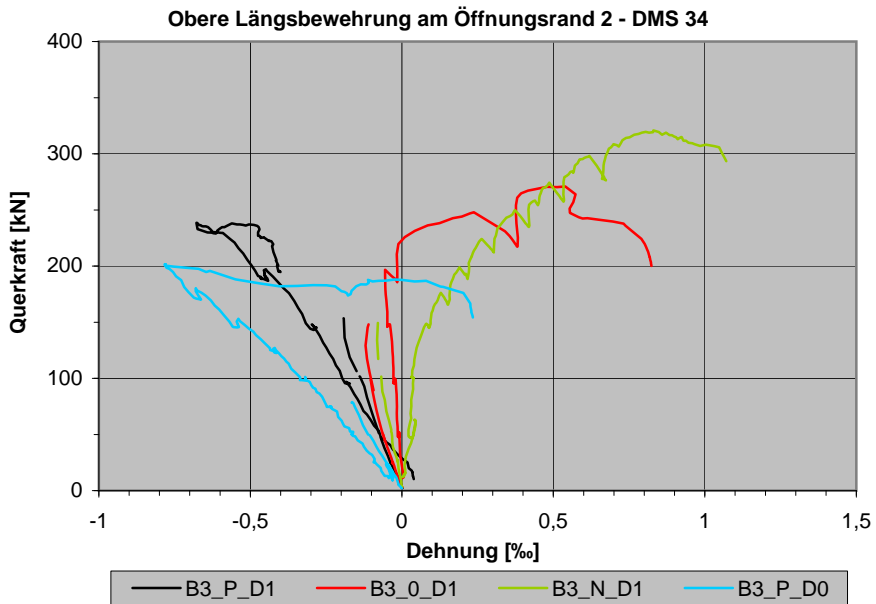
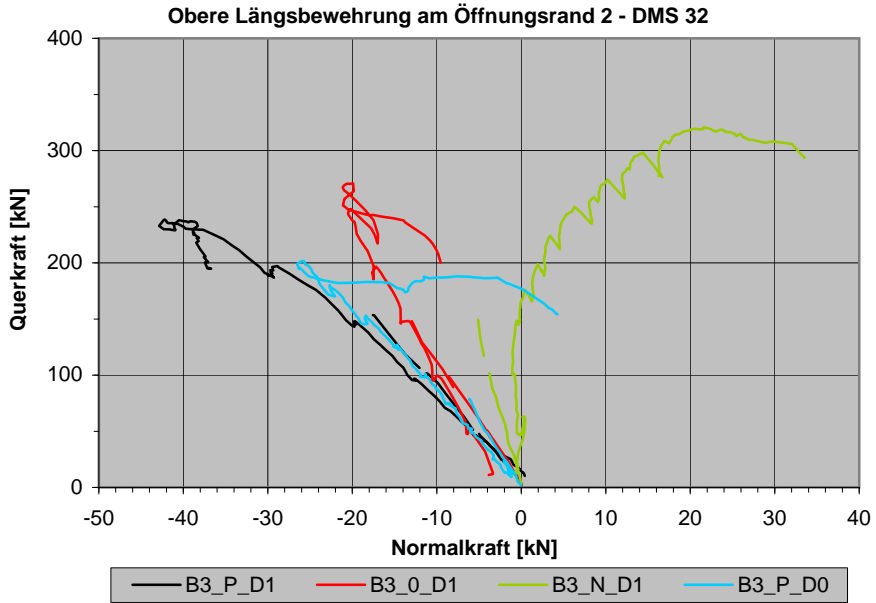


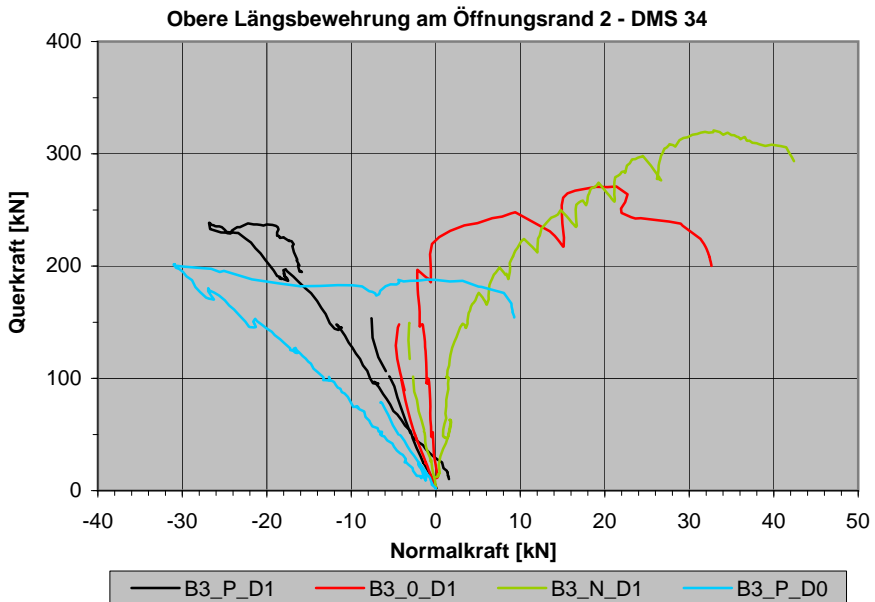
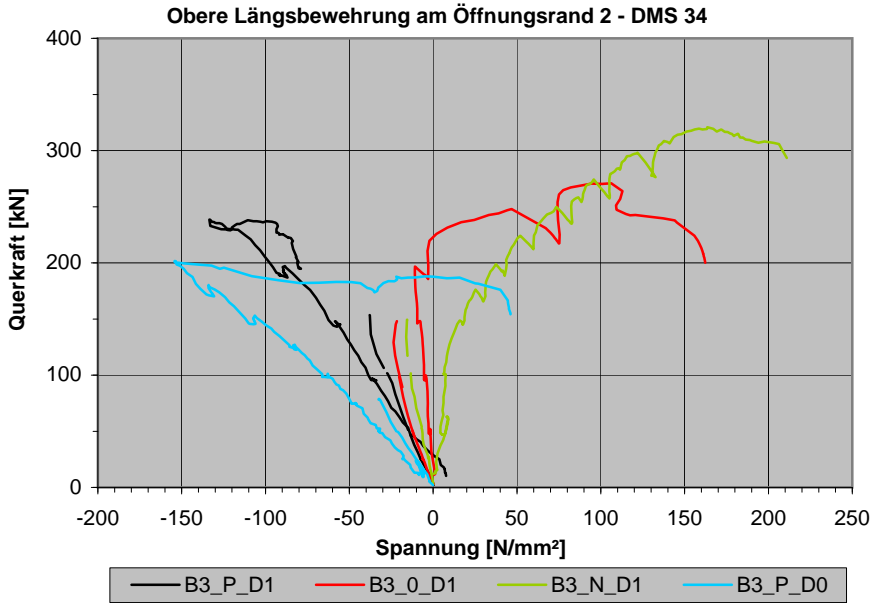


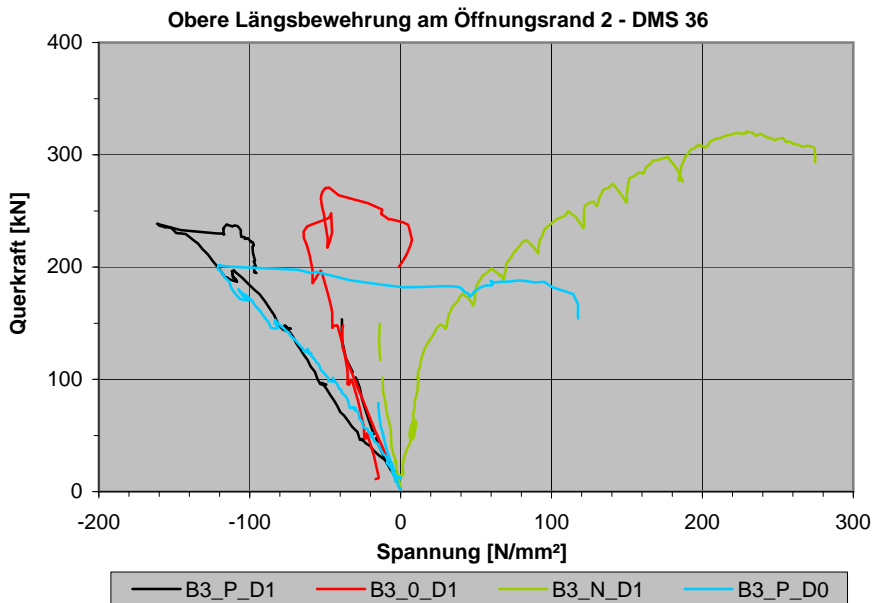
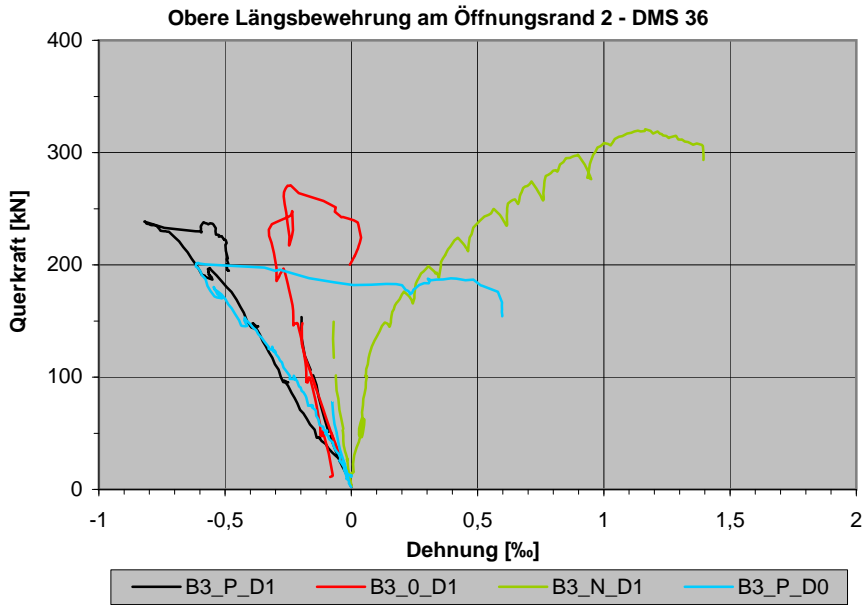


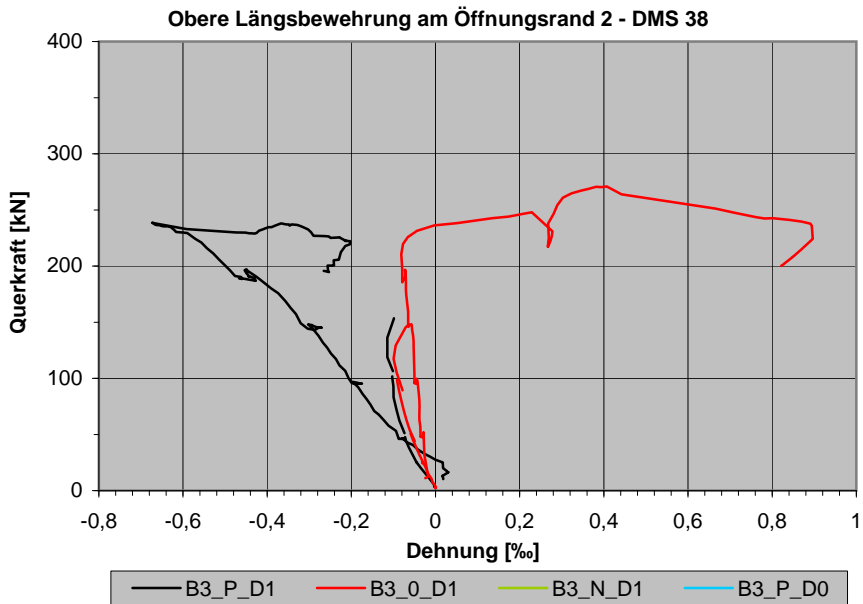
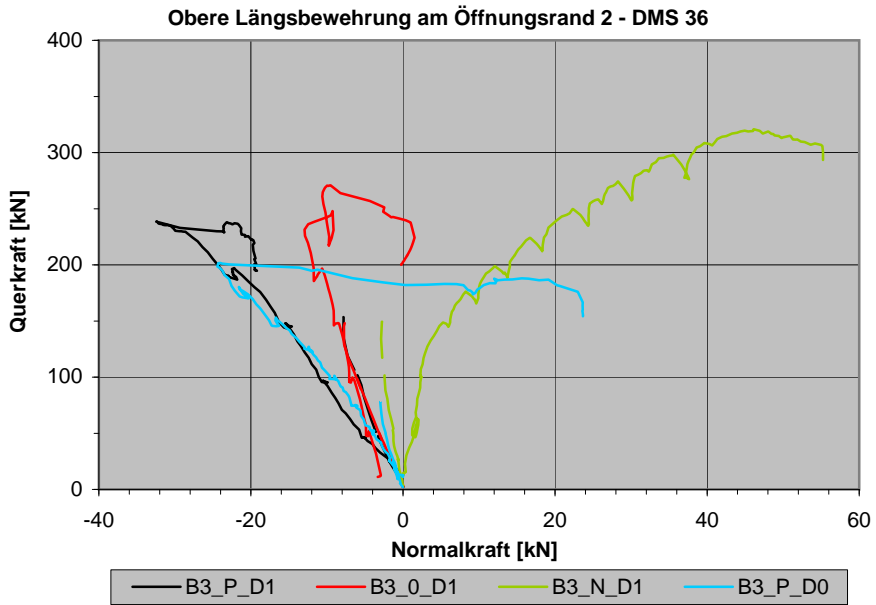


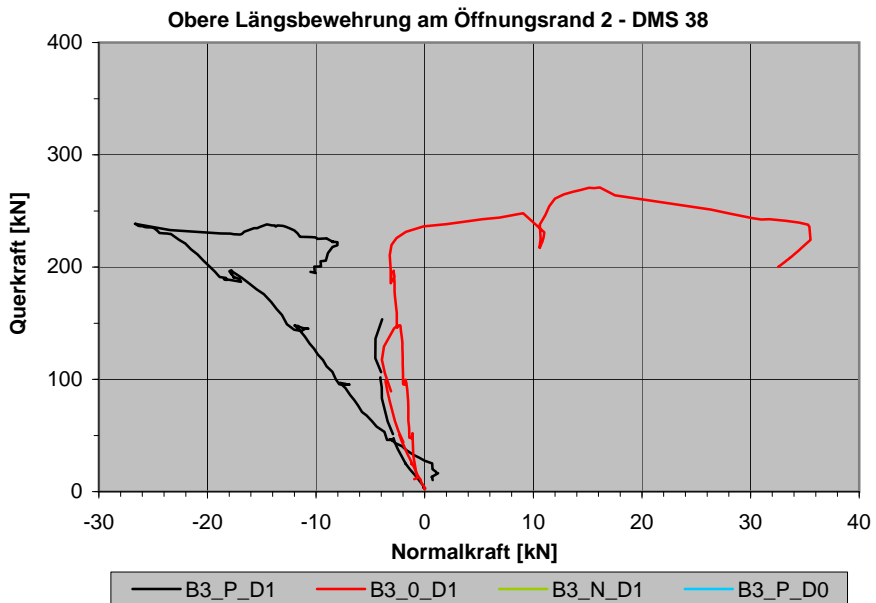
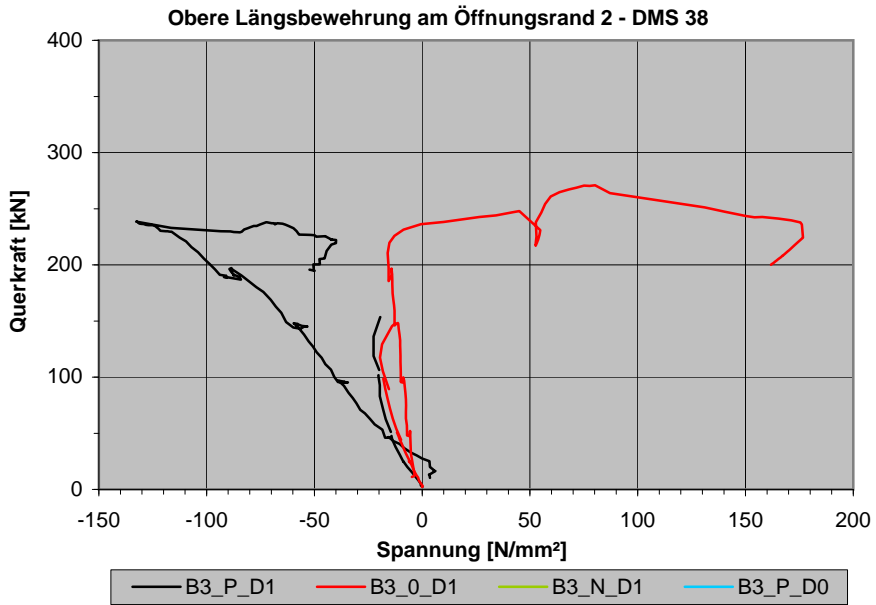




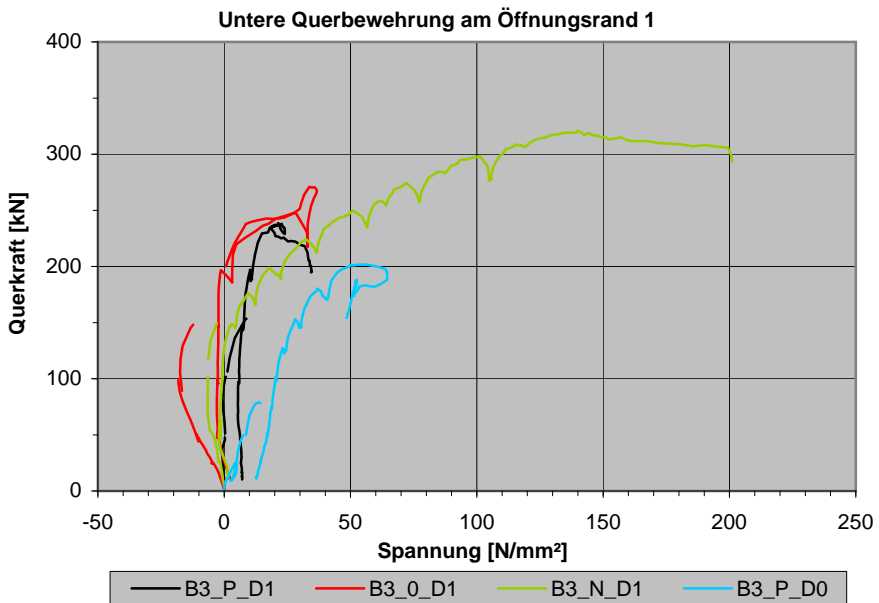
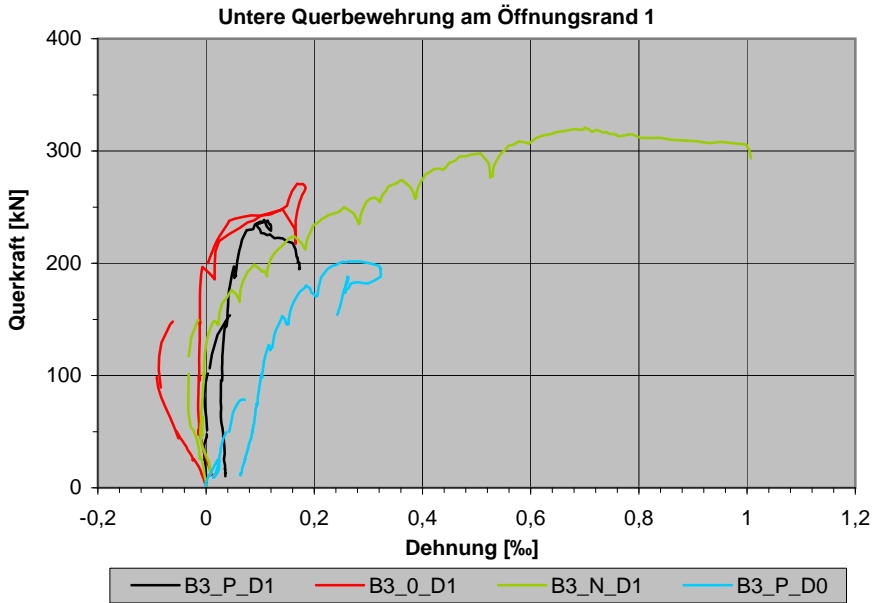


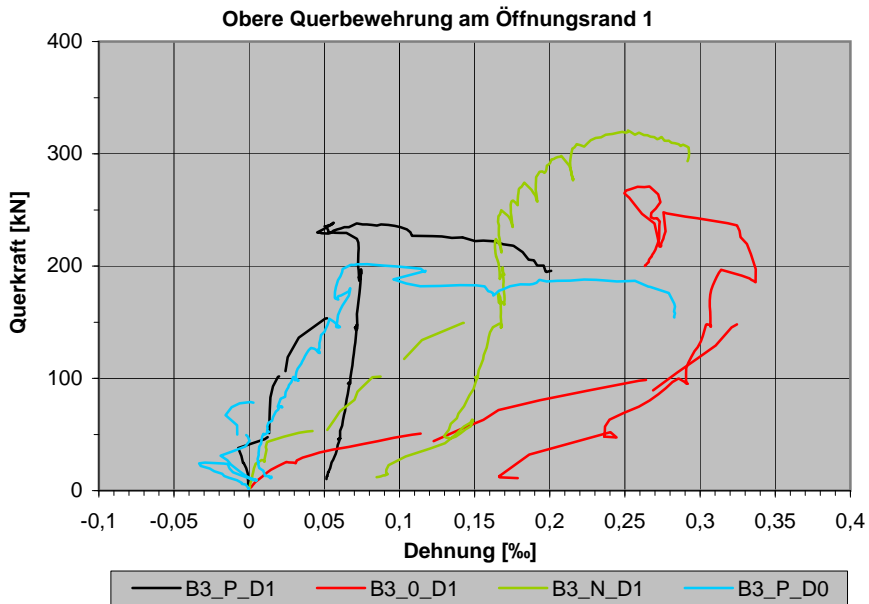
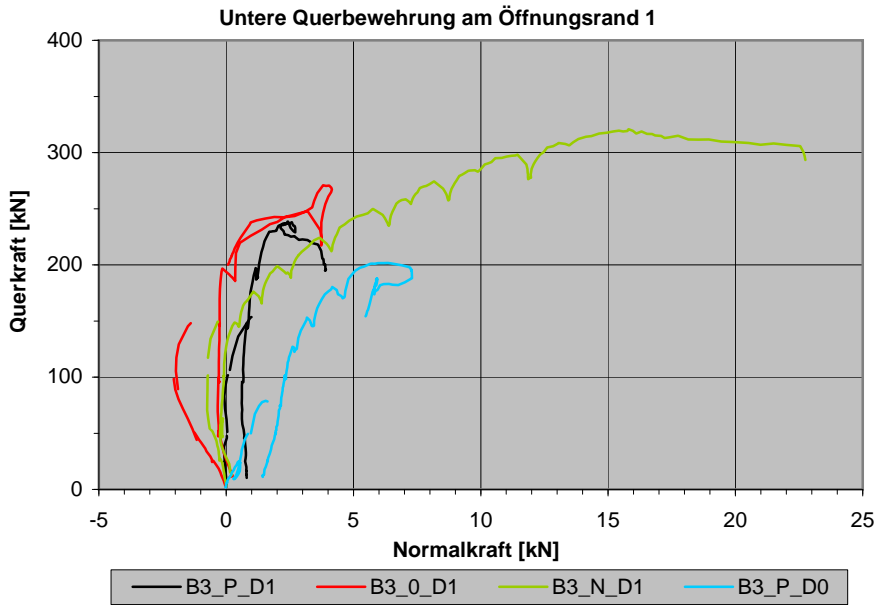


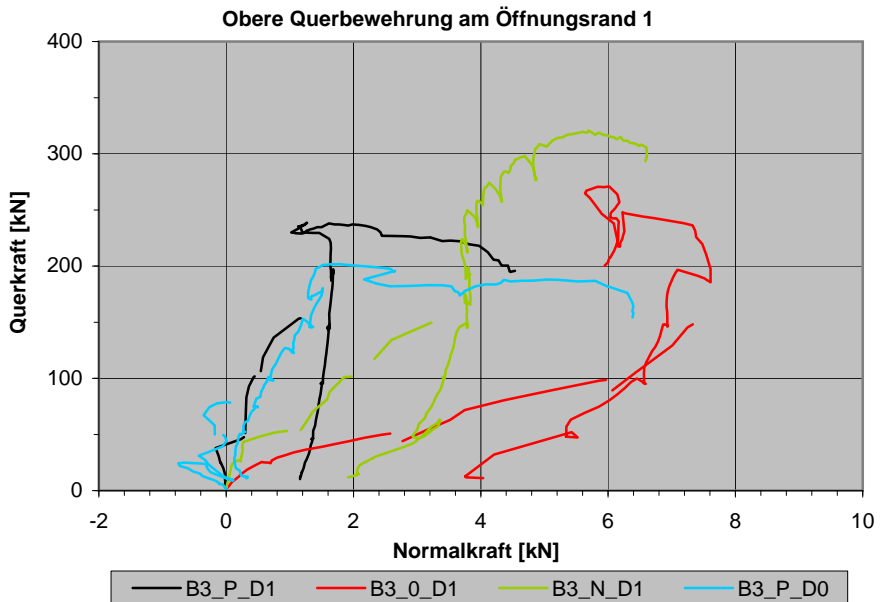
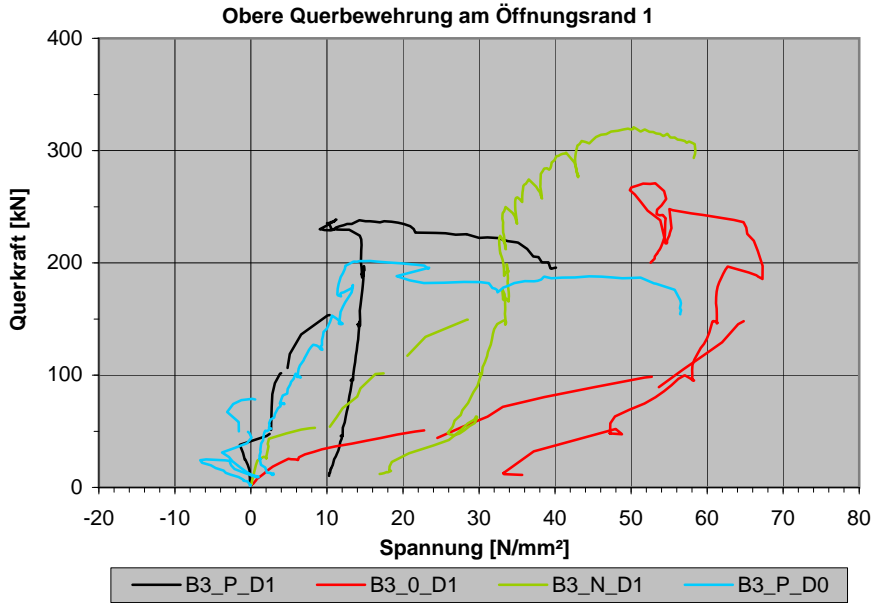


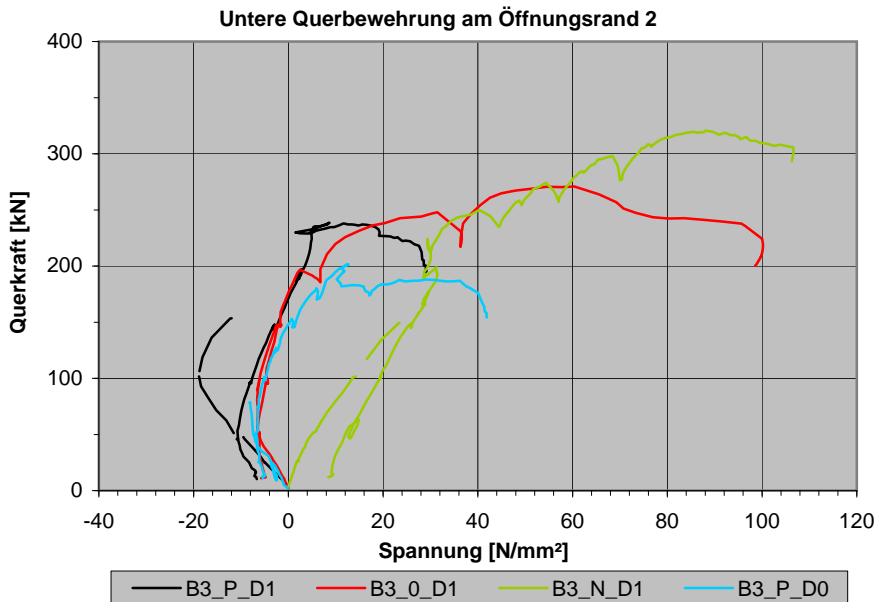
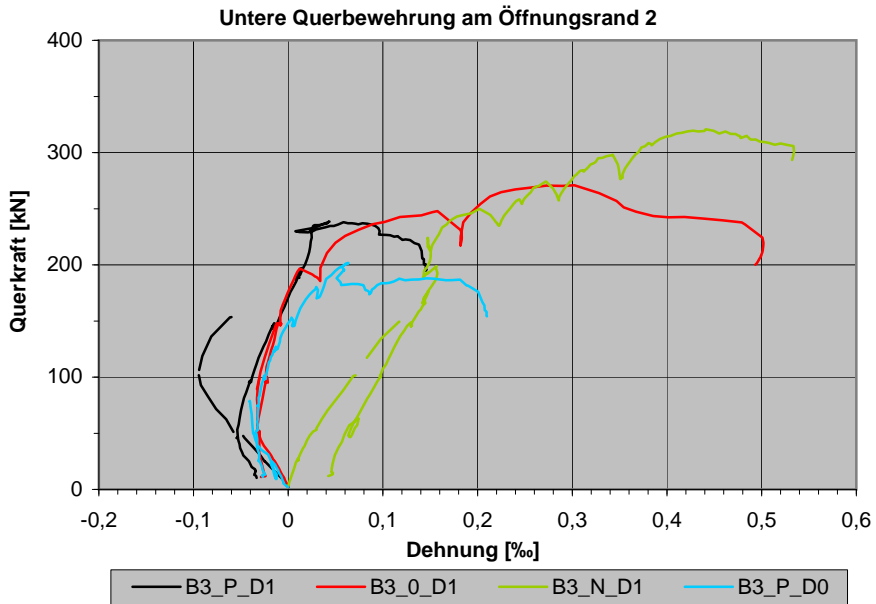


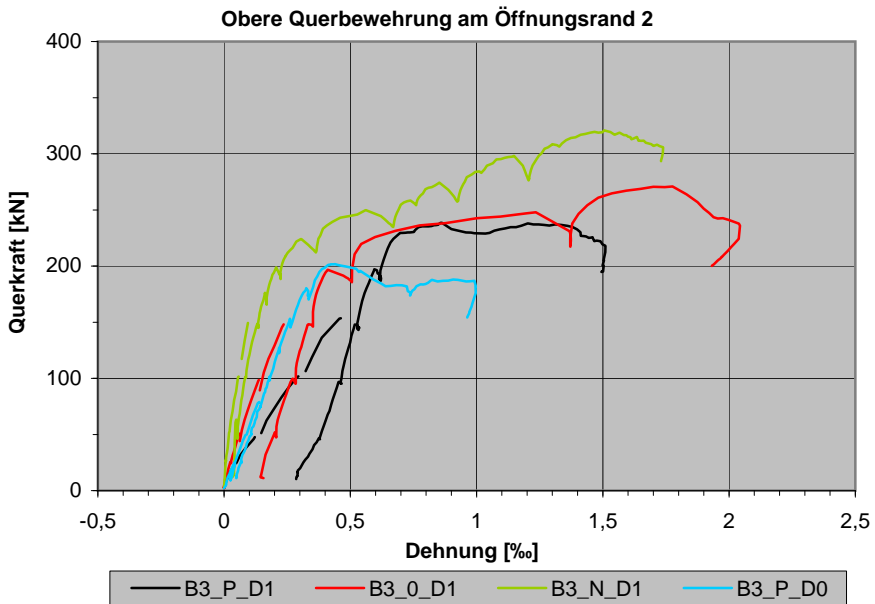
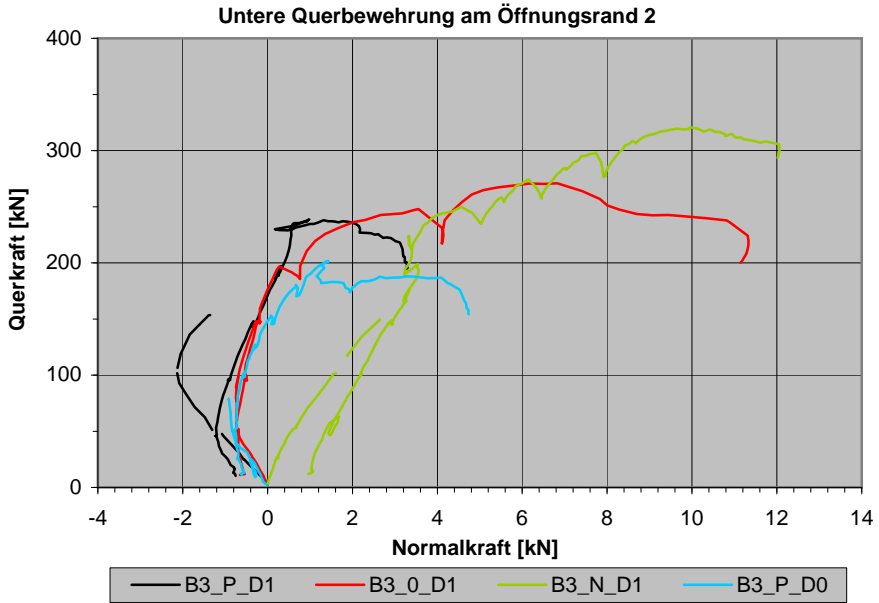
C.3.6. Querbewehrung

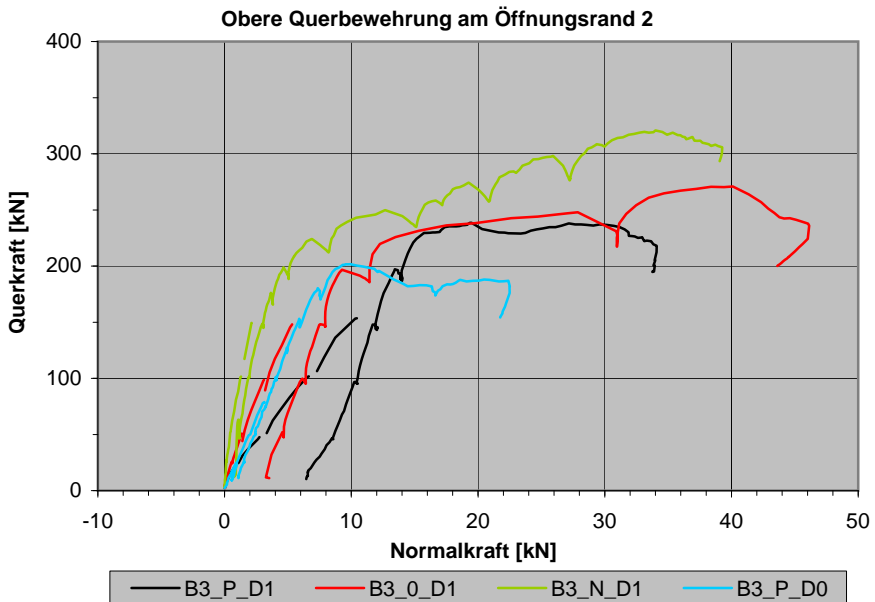
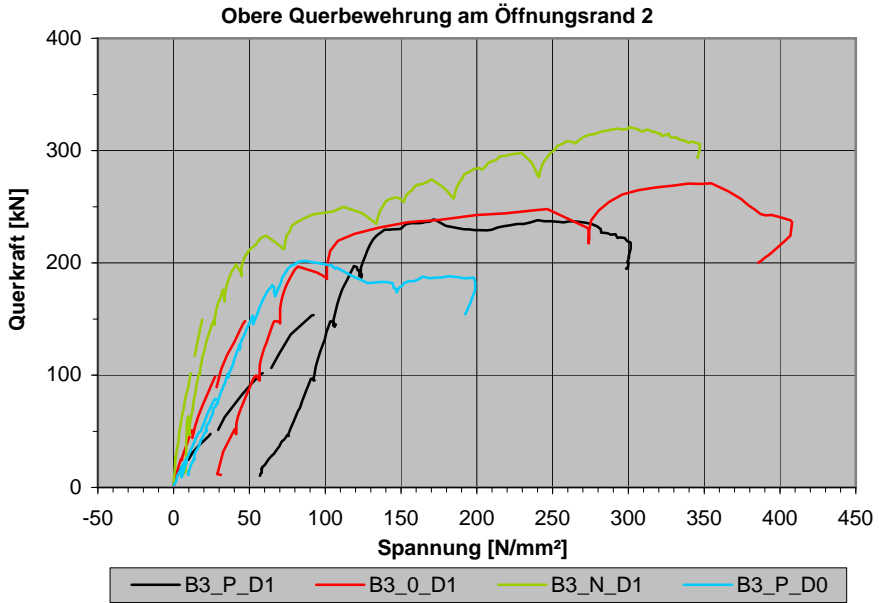




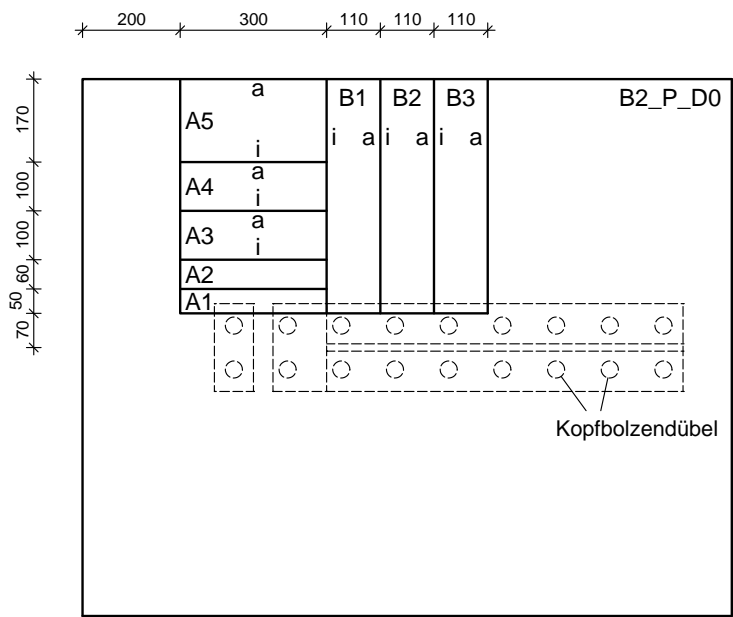




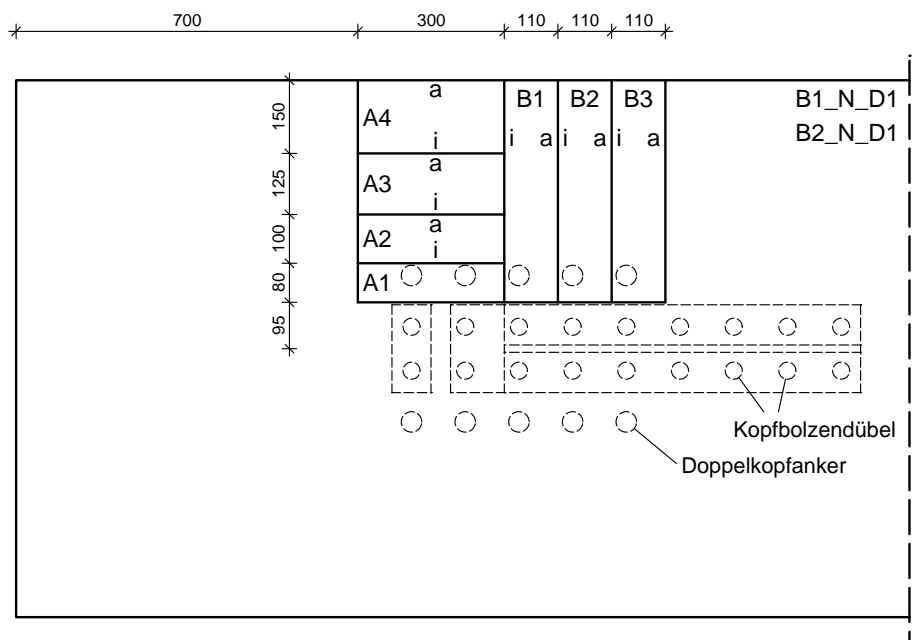
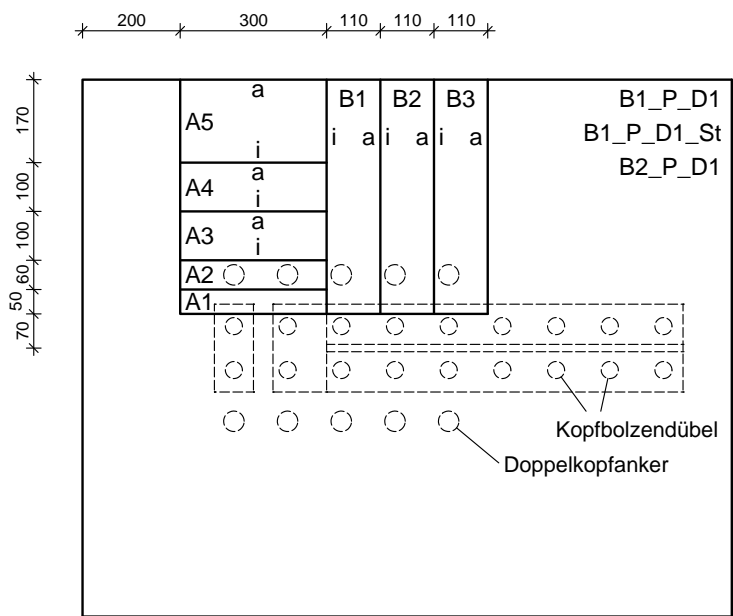




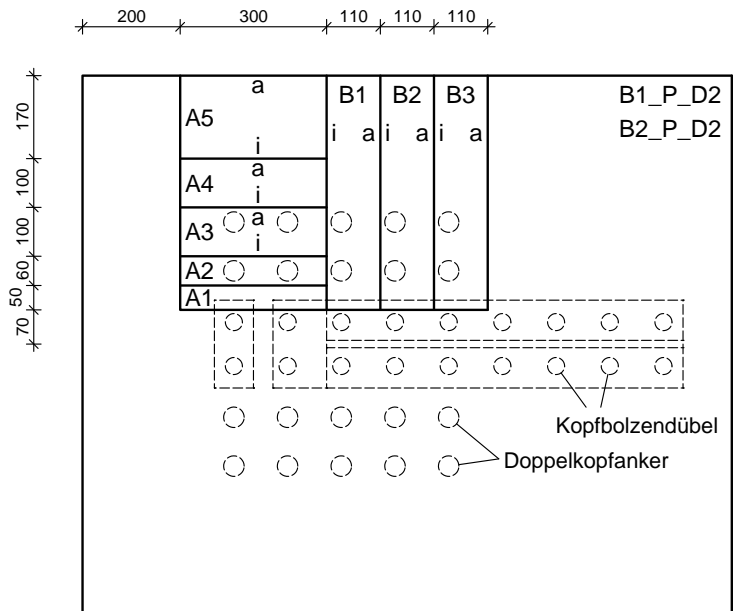
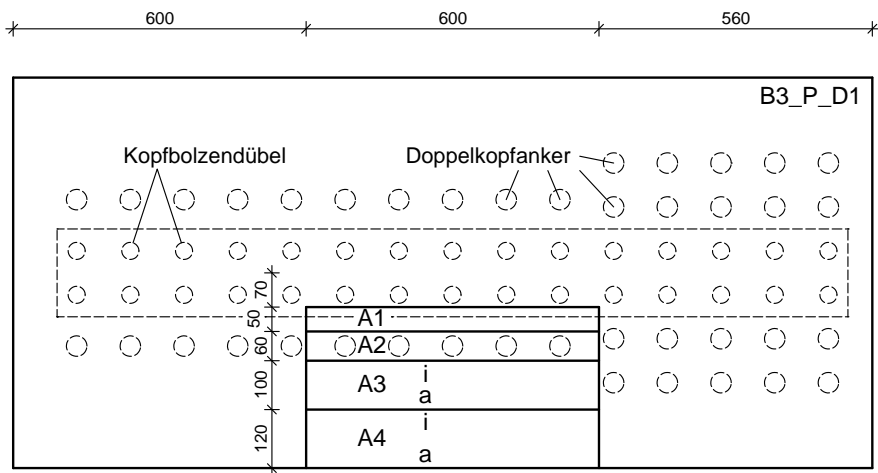
D. **Schnittbilder der aufgesägten Versuchskörper**



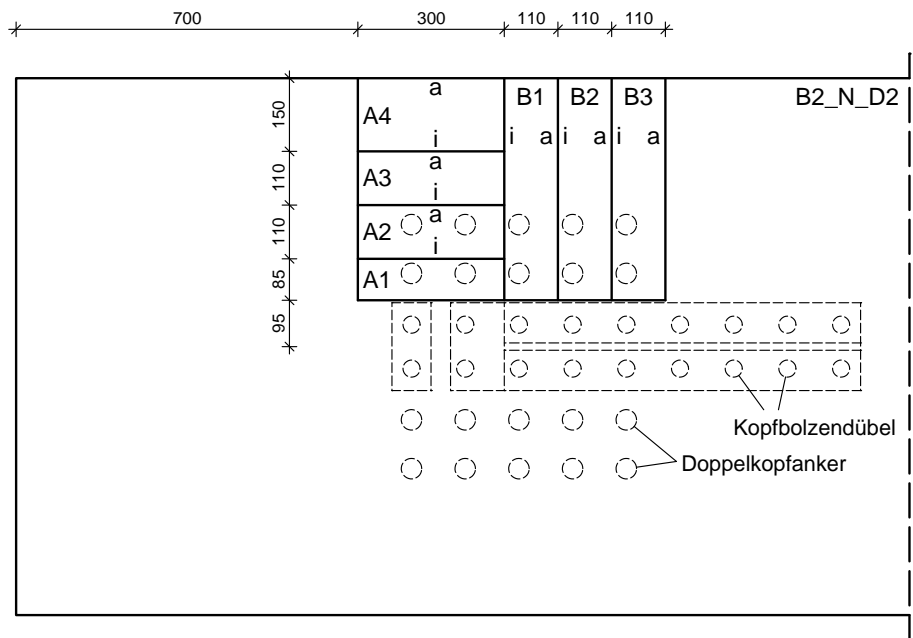
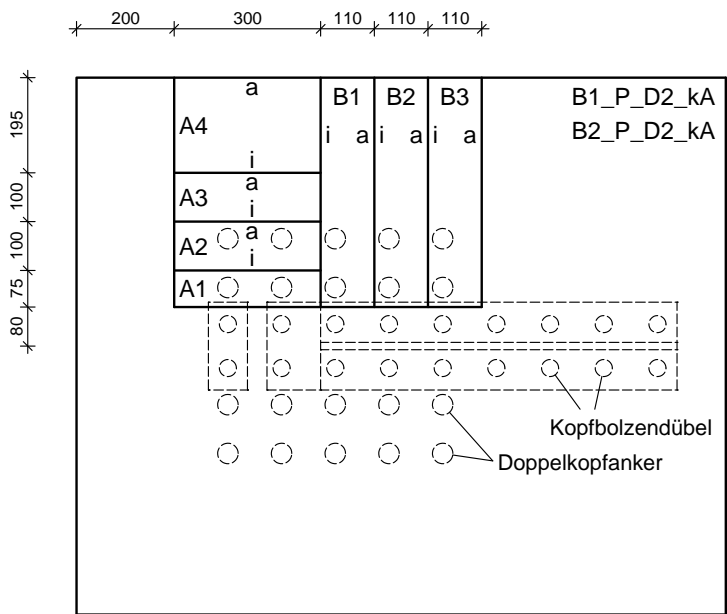
D. Schnittbilder der aufgesägten Versuchskörper



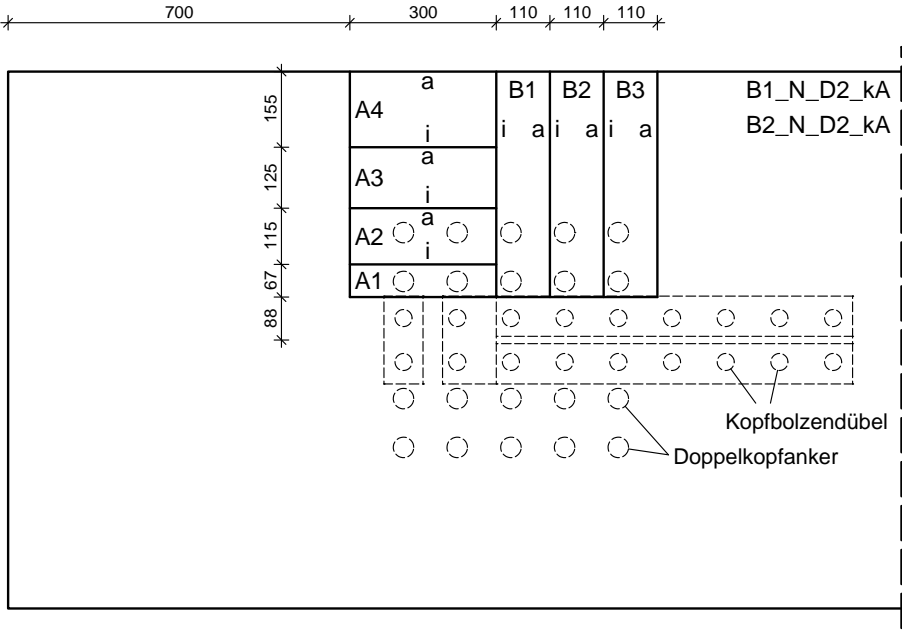
D. Schnittbilder der aufgesägten Versuchskörper



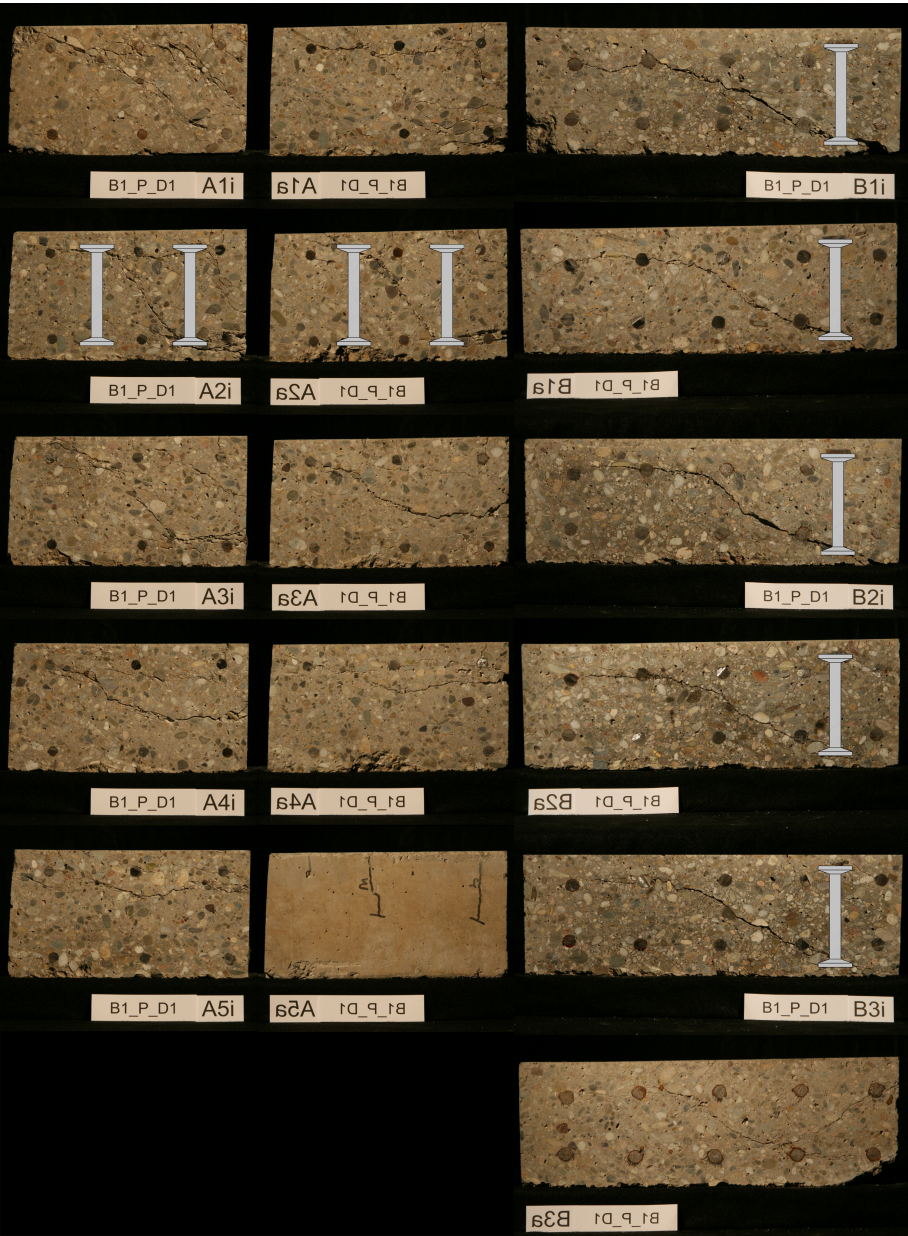
D. Schnittbilder der aufgesägten Versuchskörper



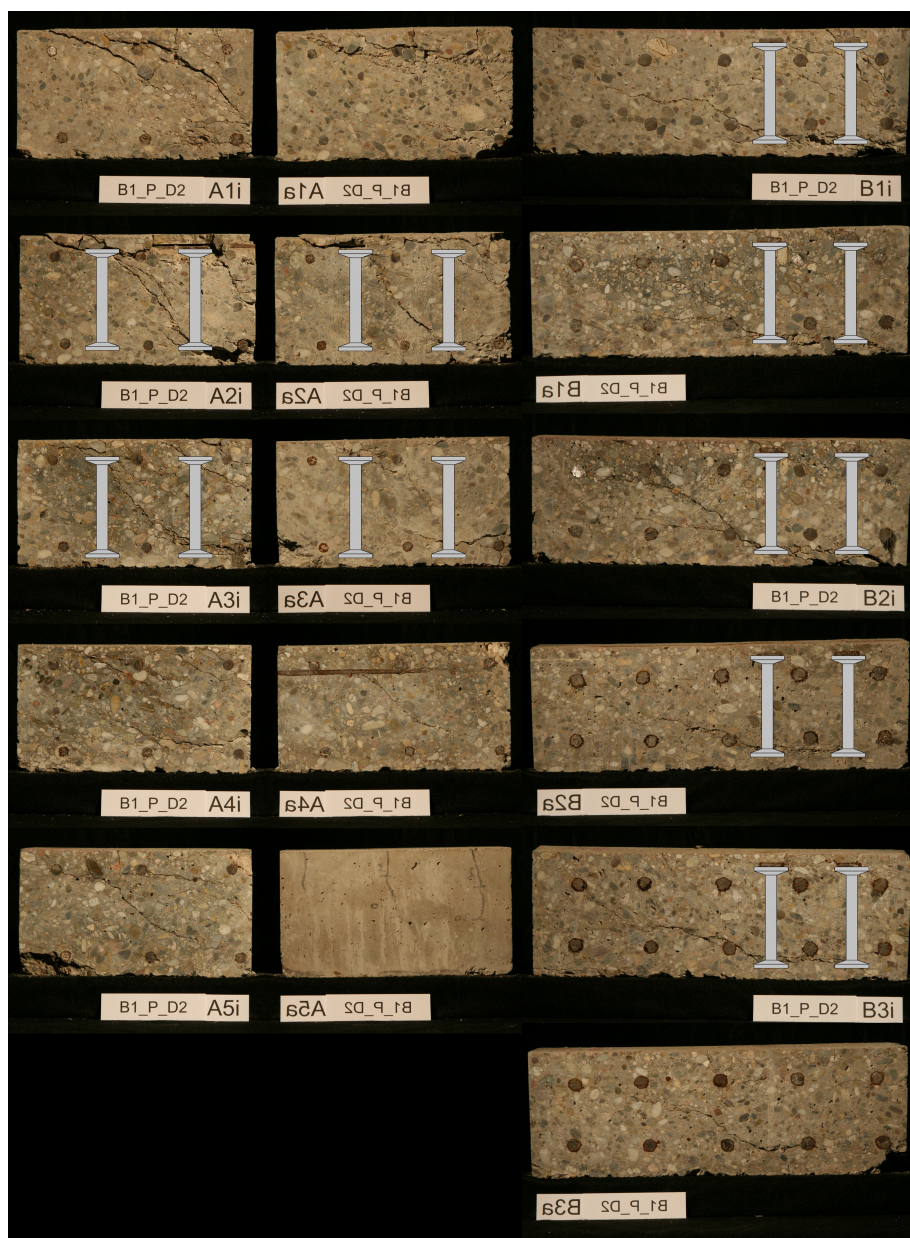
D. Schnittbilder der aufgesägten Versuchskörper



E. Fotos der Schnittflächen der aufgesägten Versuchskörper

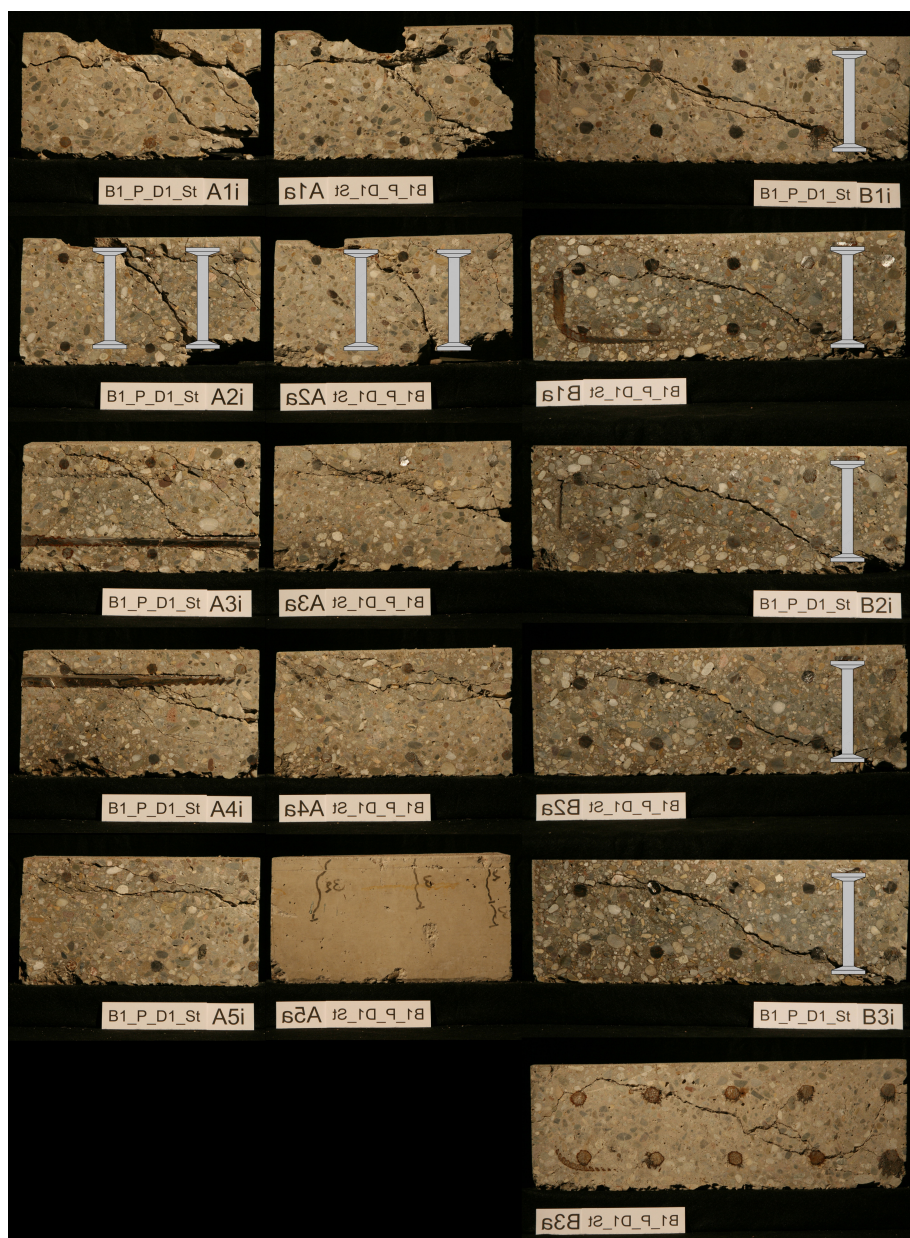


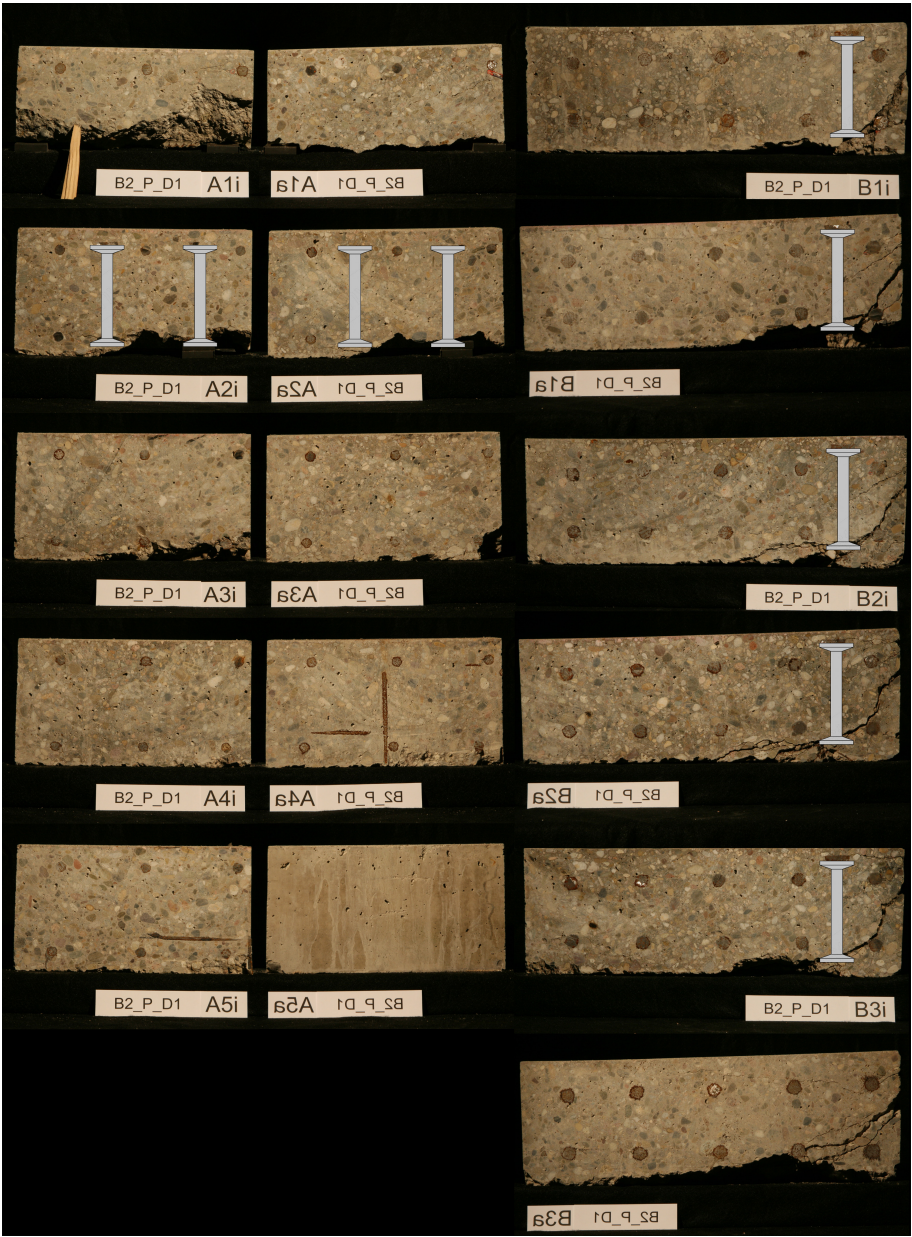


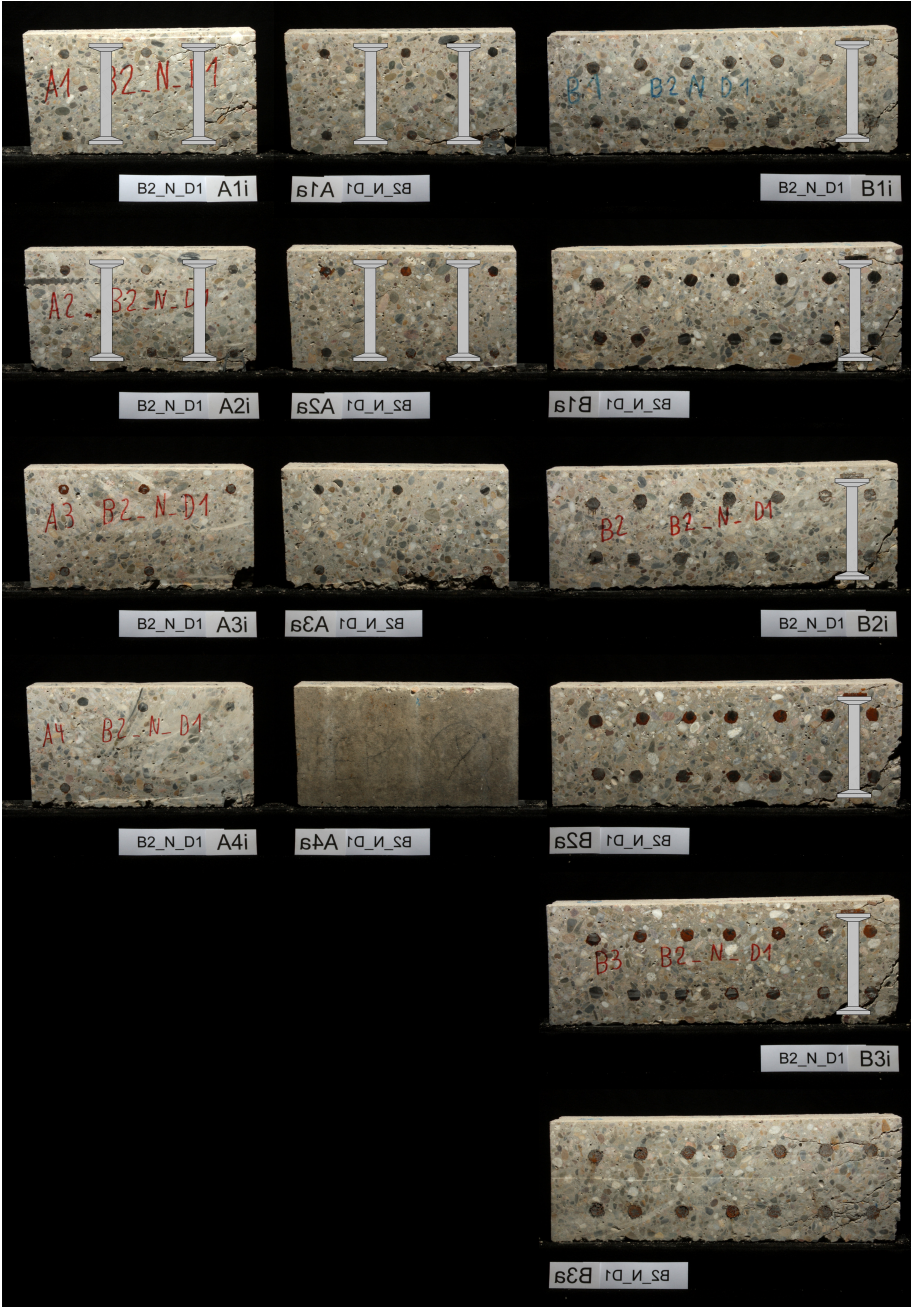


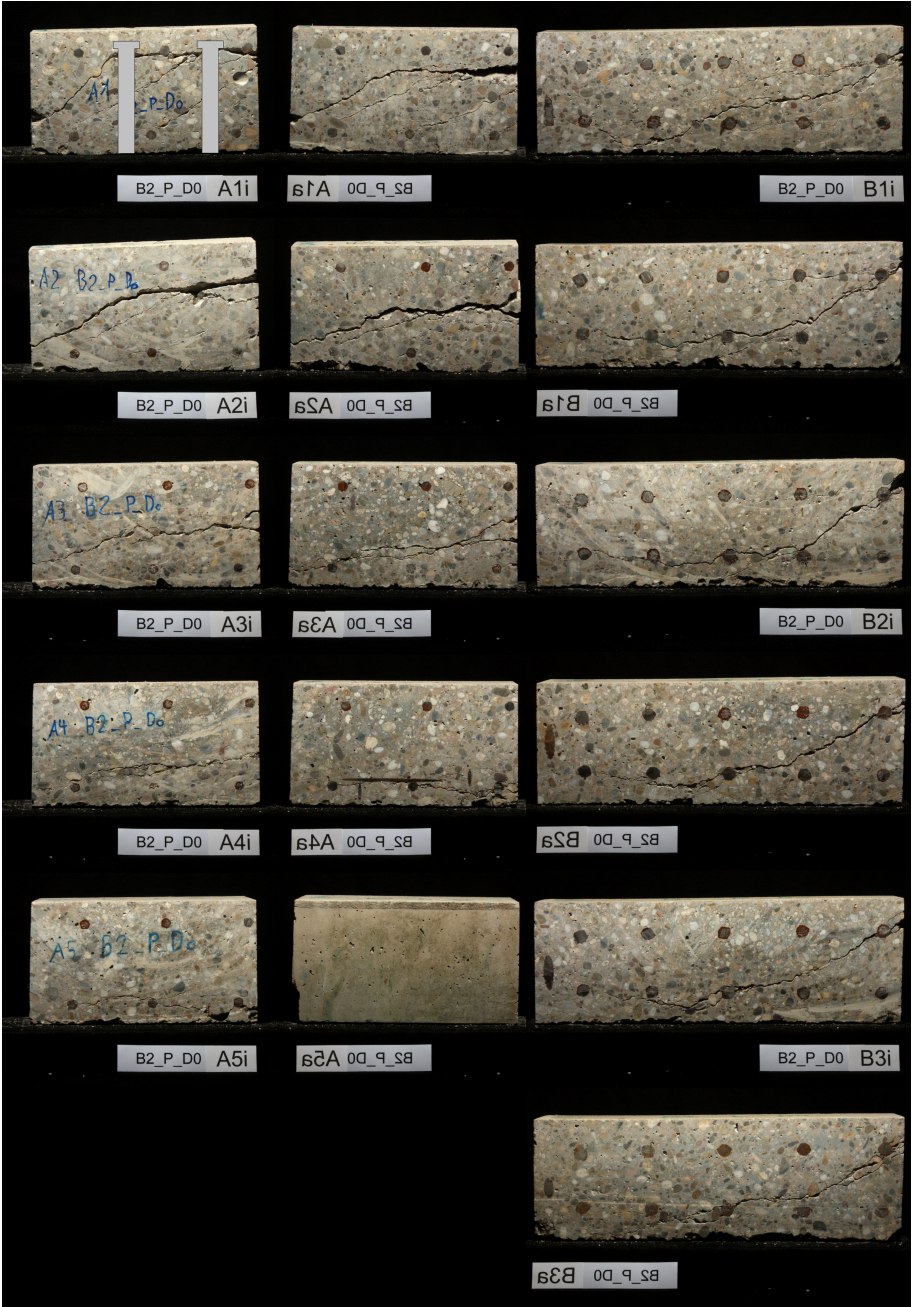


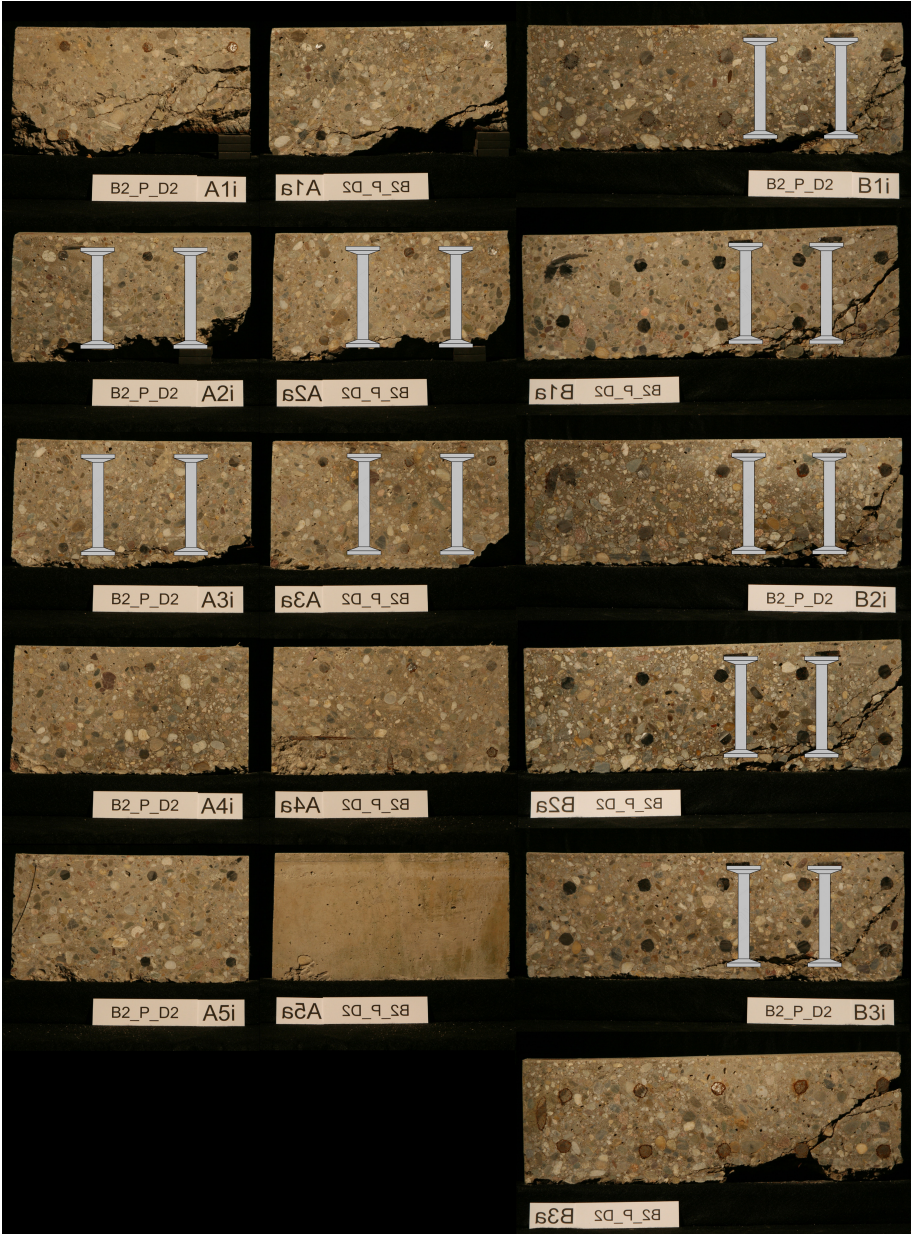


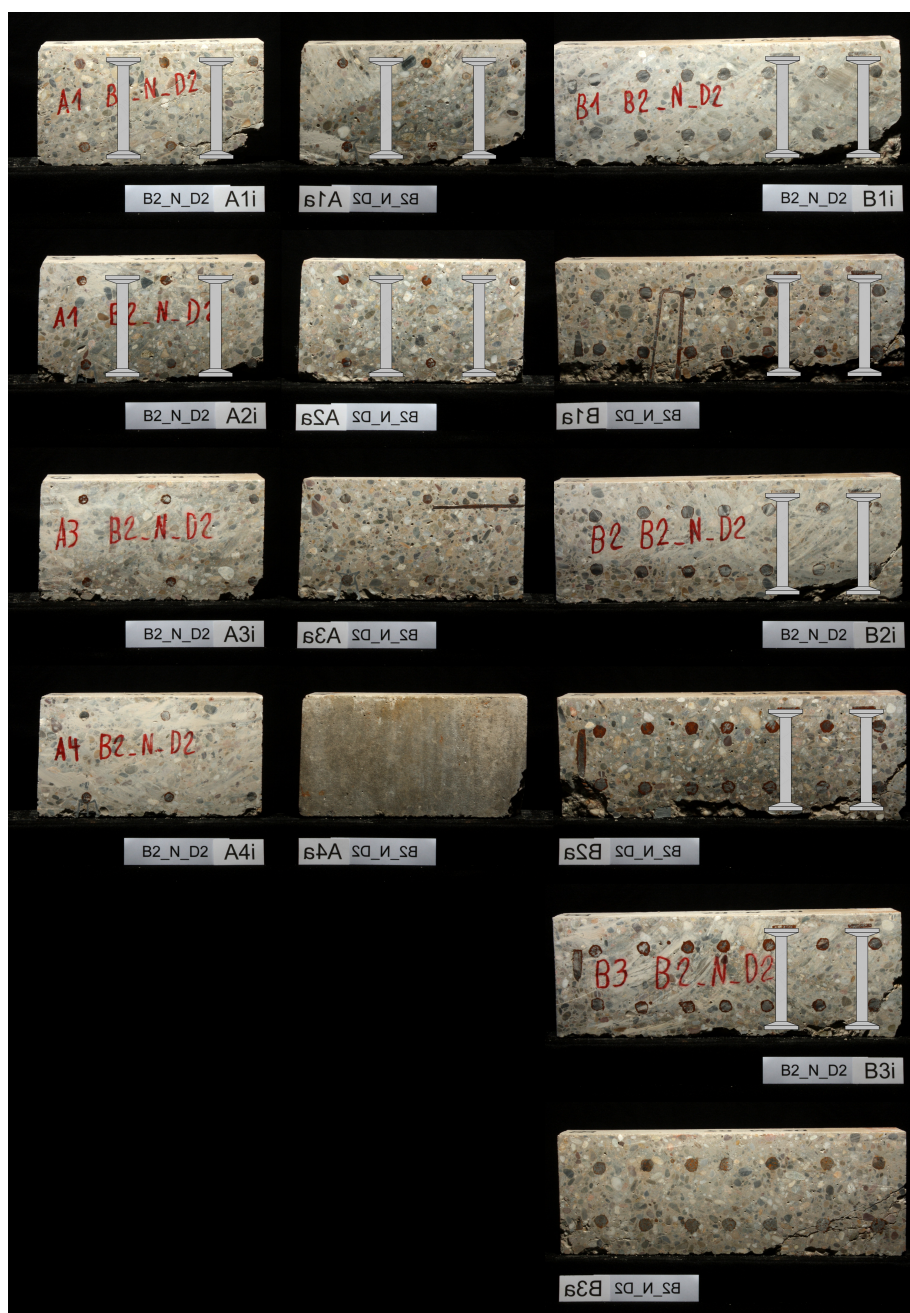


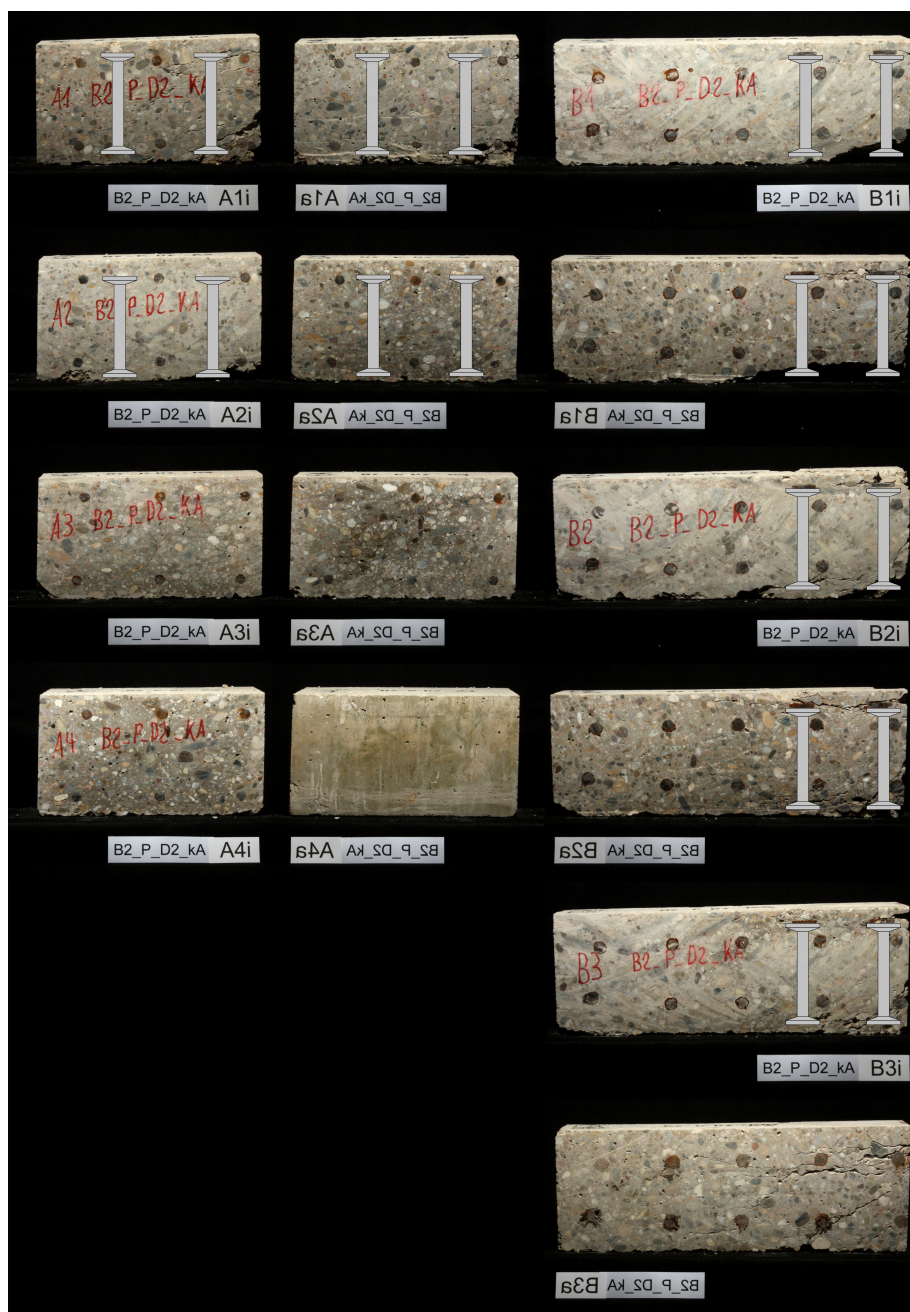


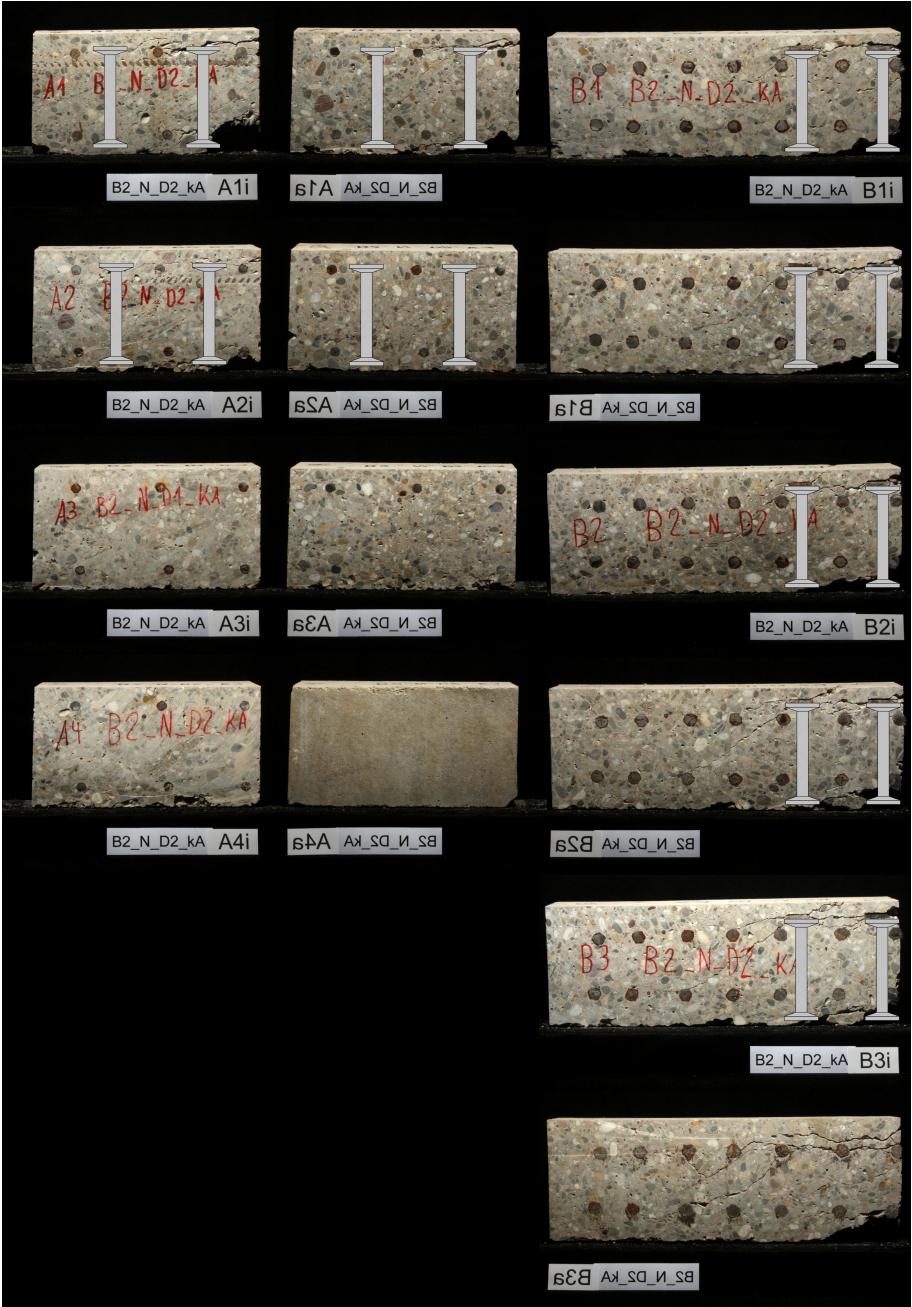


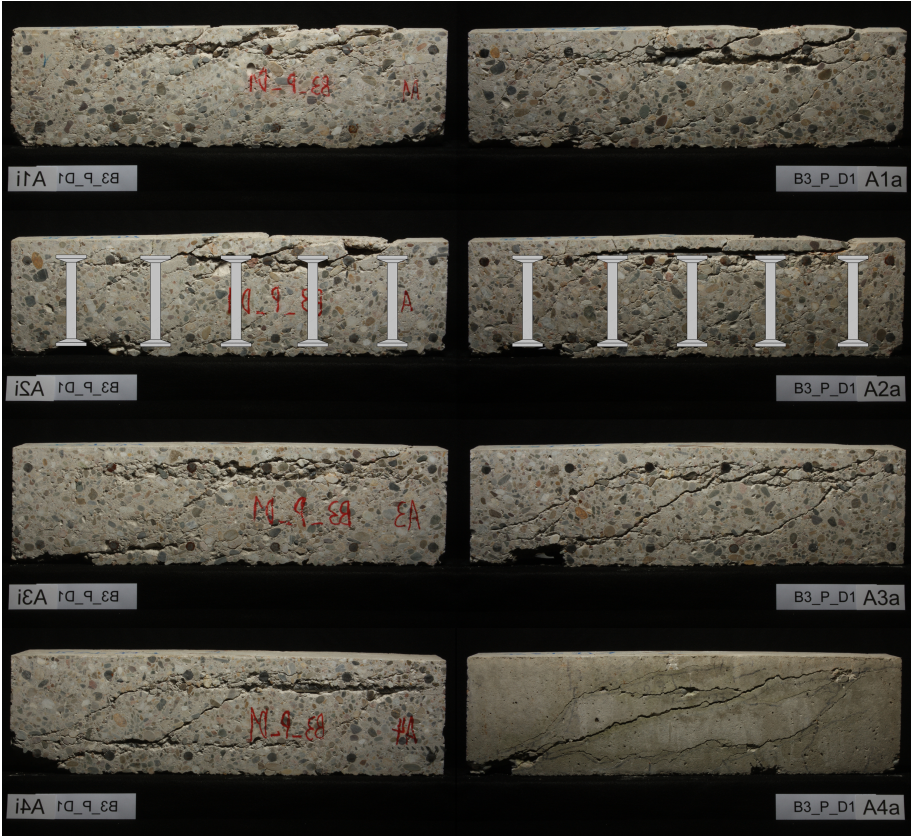






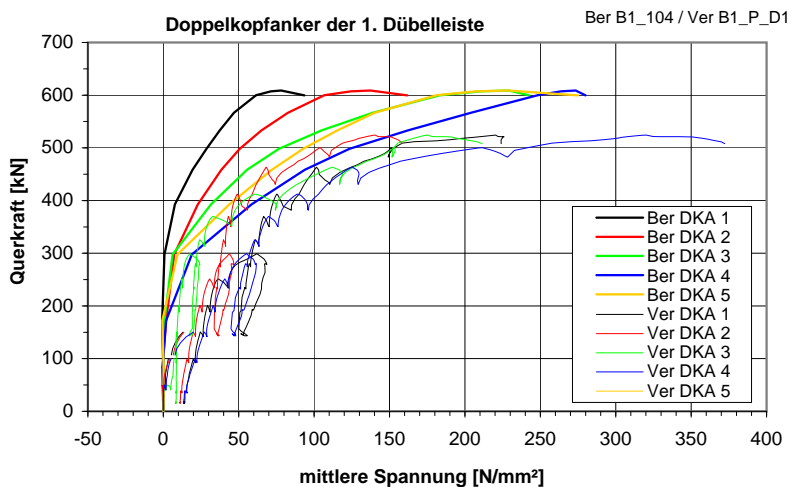
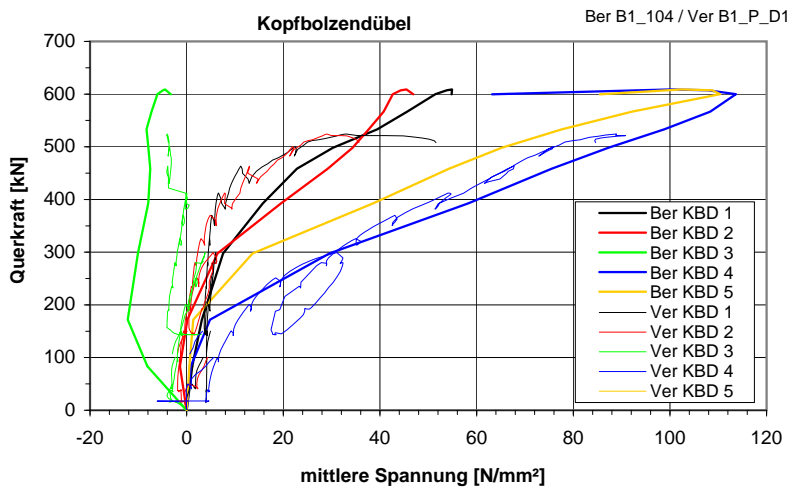


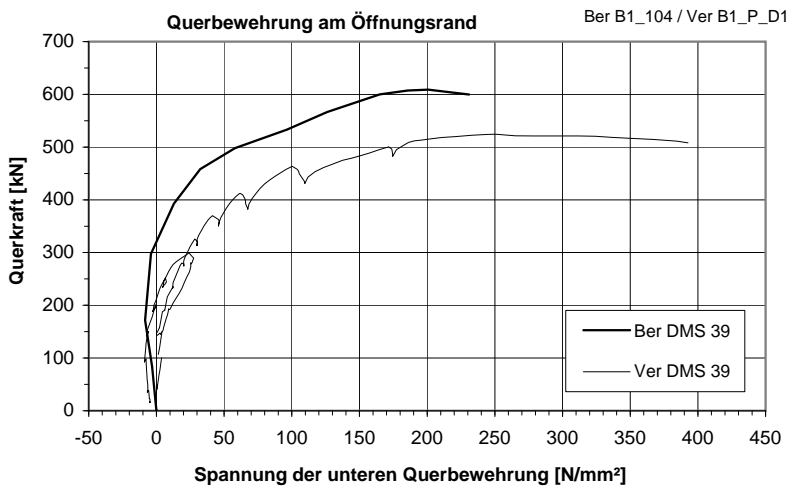
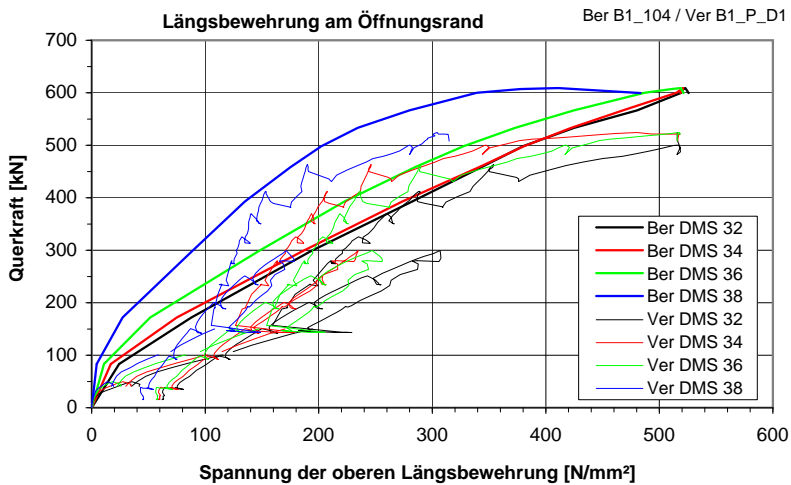
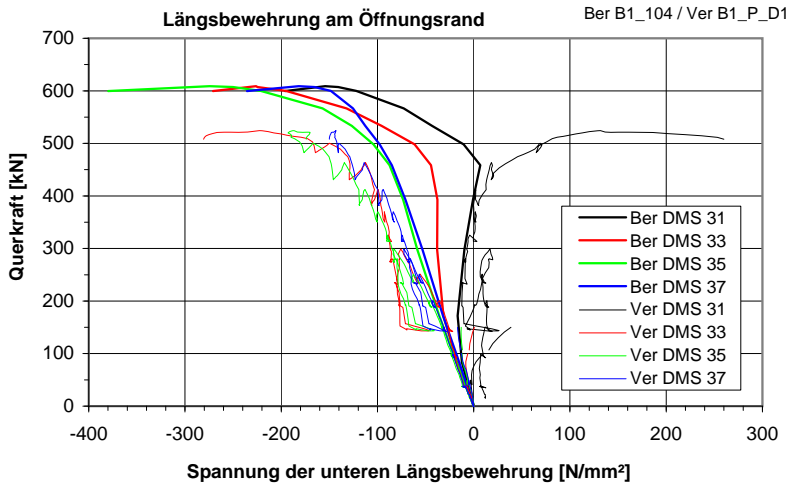


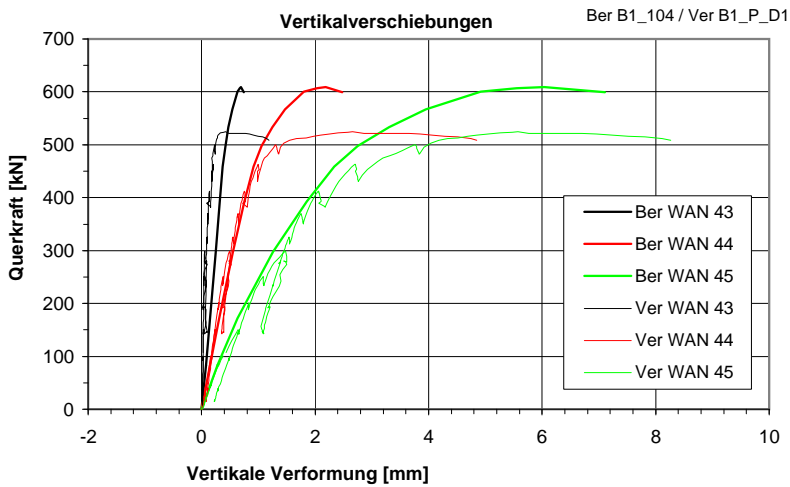
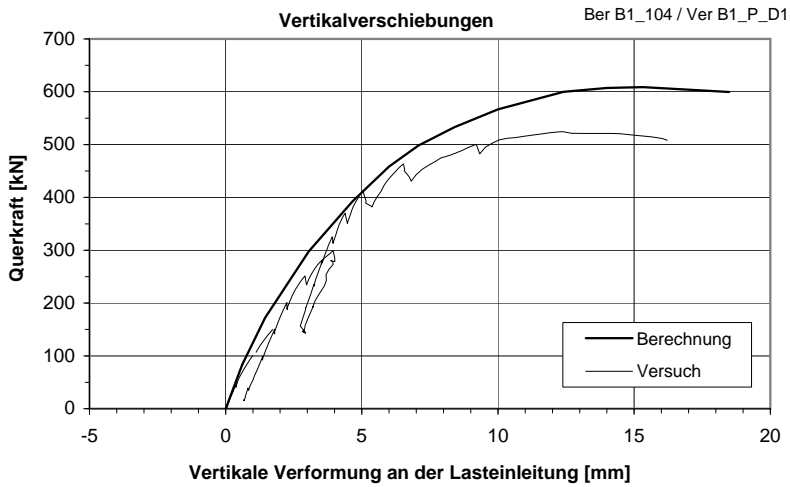
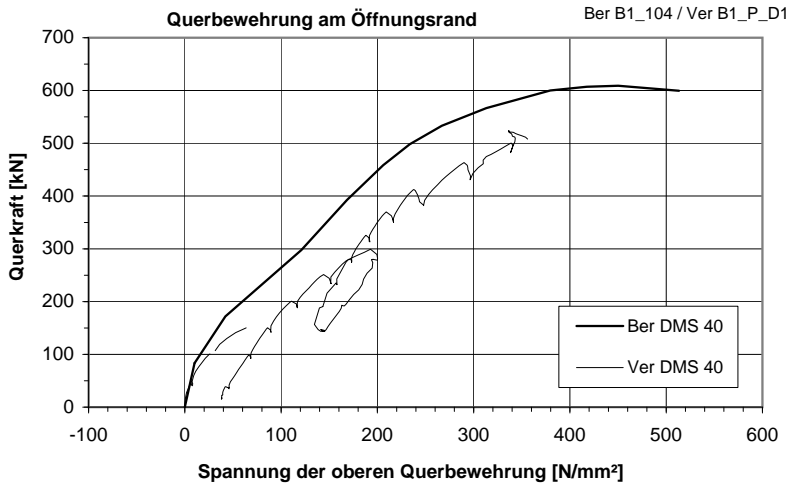


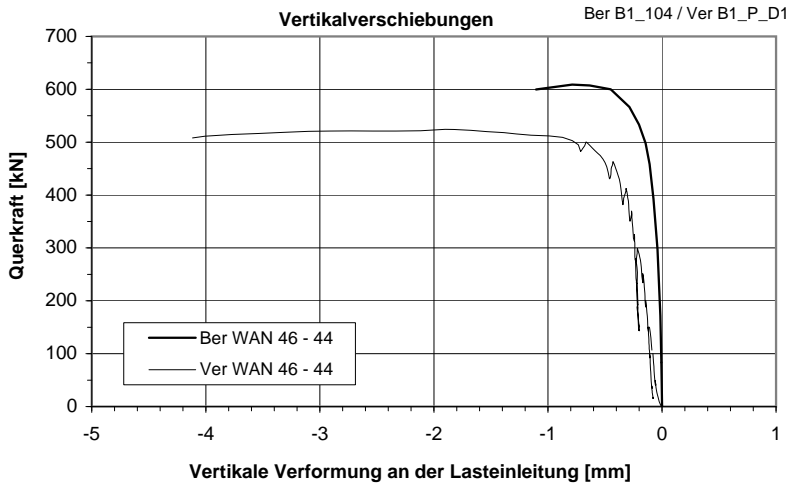
F. Vergleich der FE-Ergebnisse mit den Versuchsmesswerten

F.1. Versuch B1_P_D1

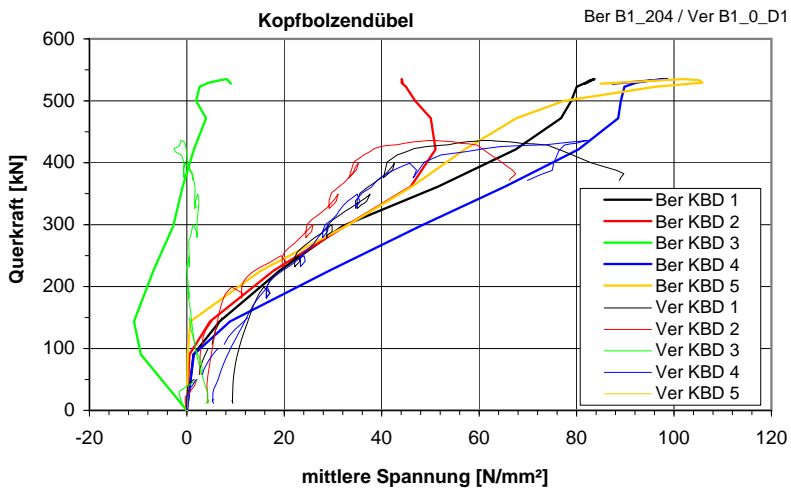


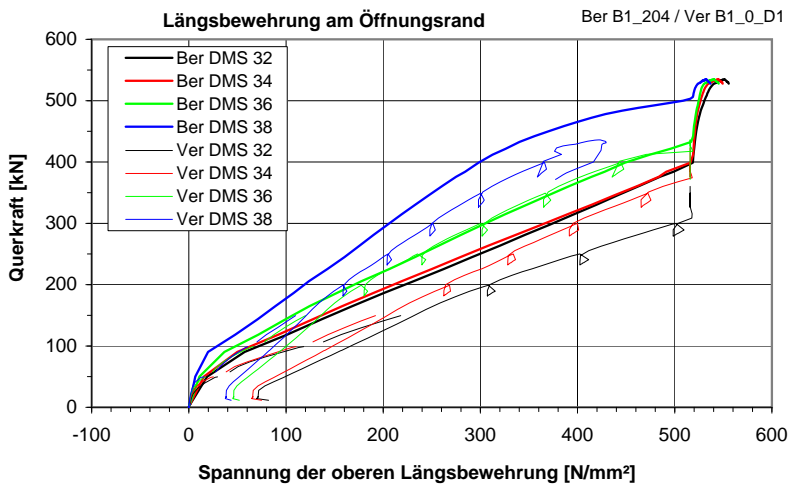
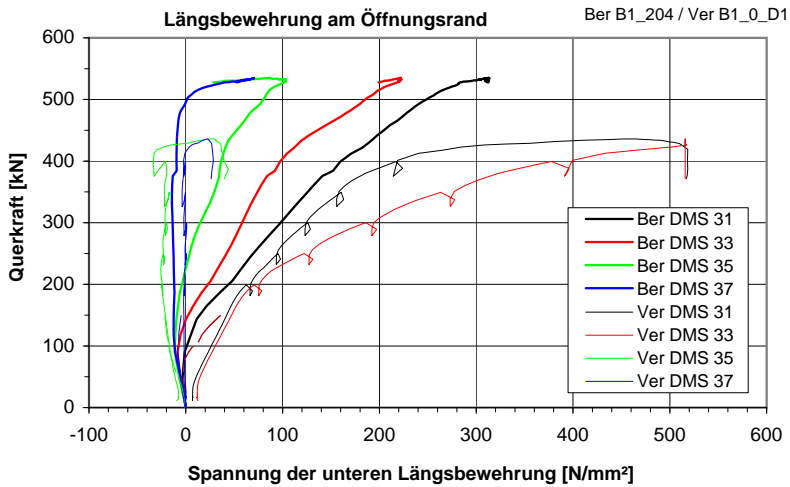
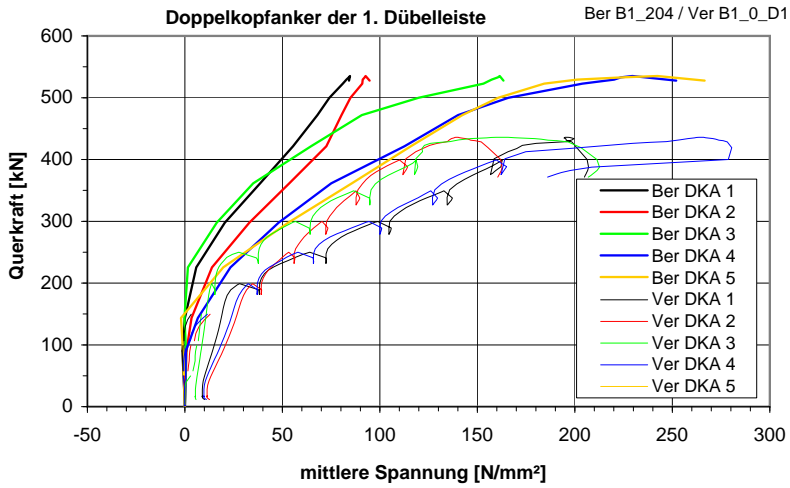


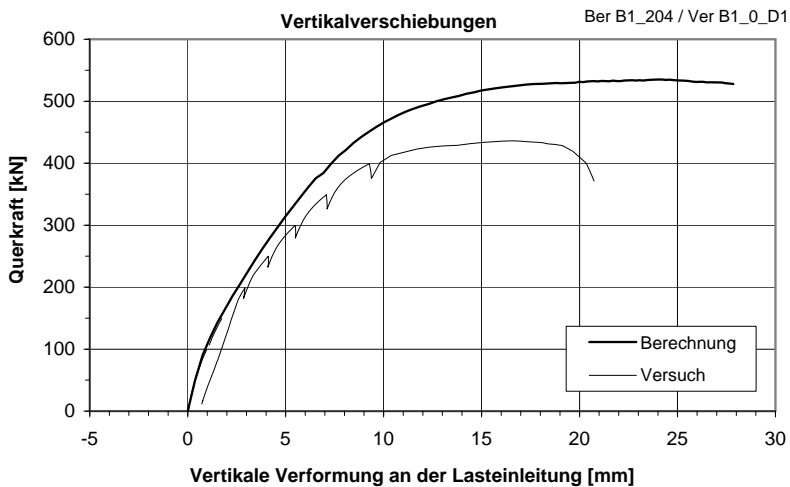
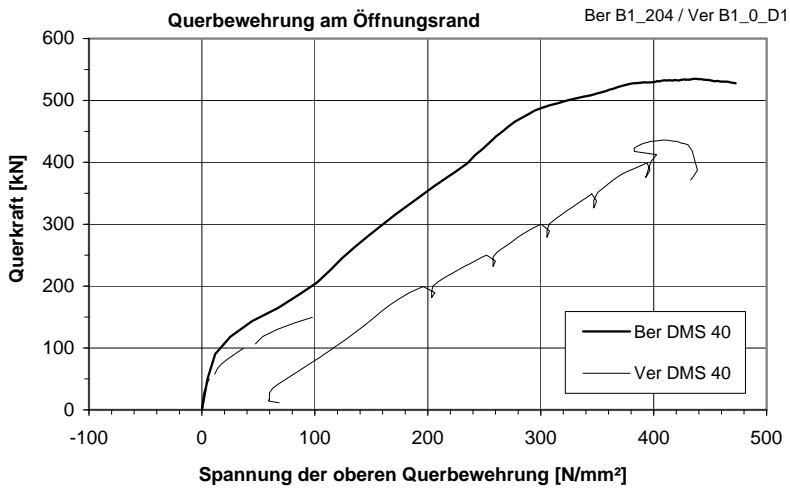
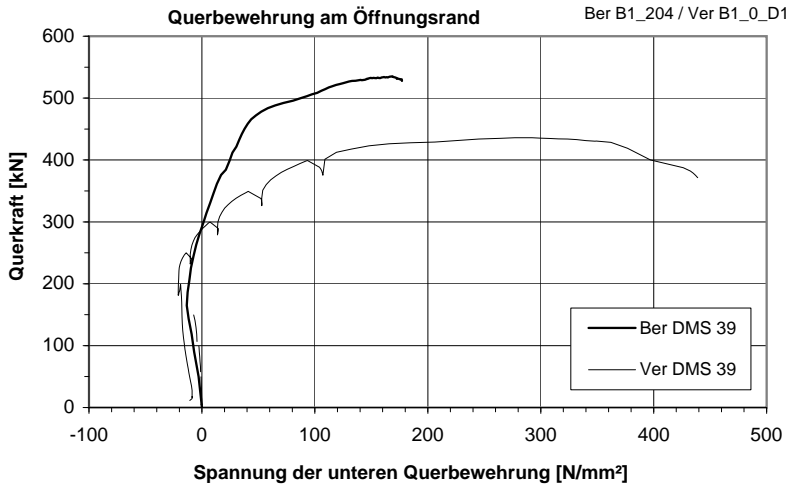


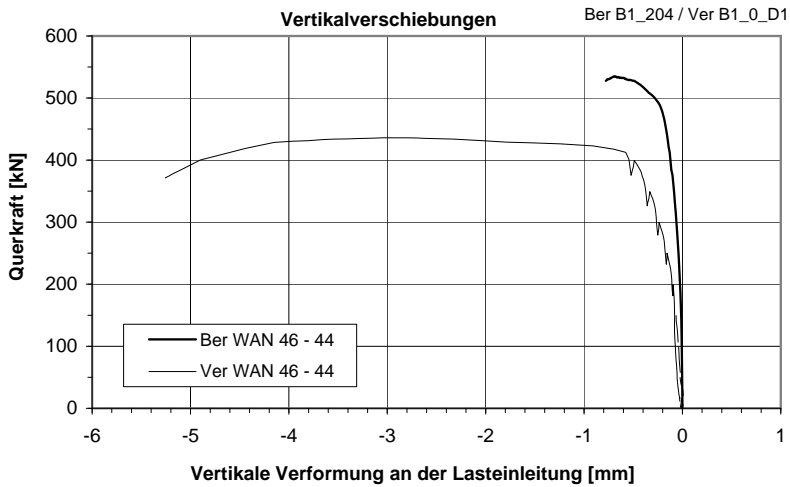
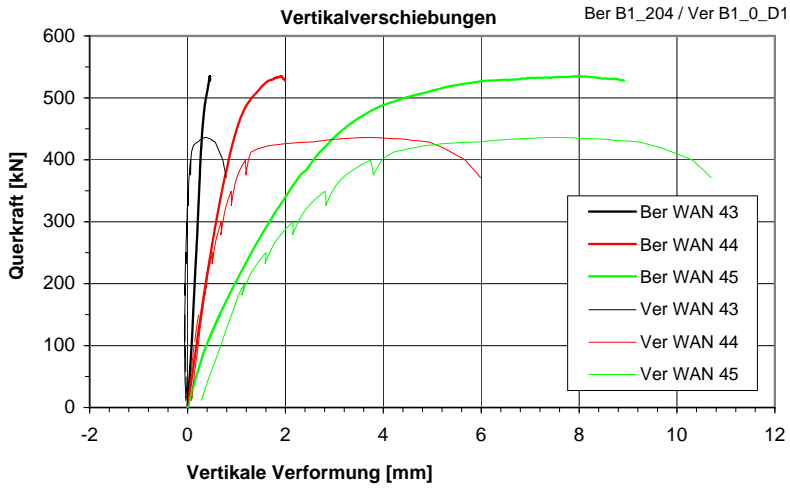


F.2. Versuch B1_0_D1

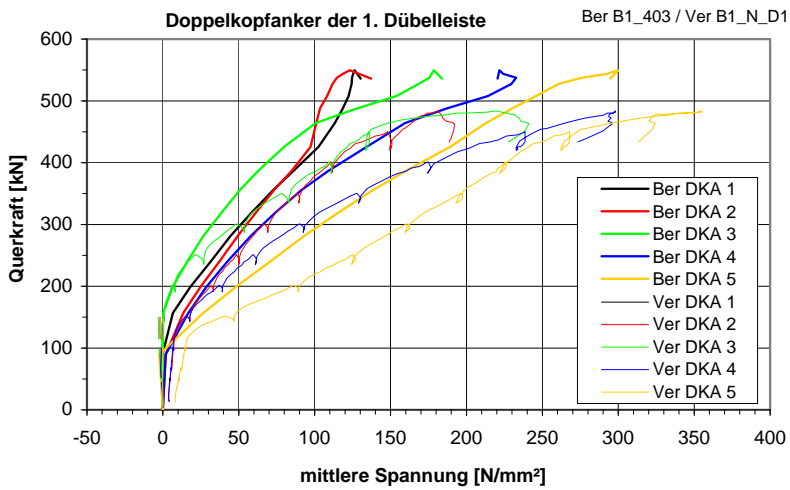
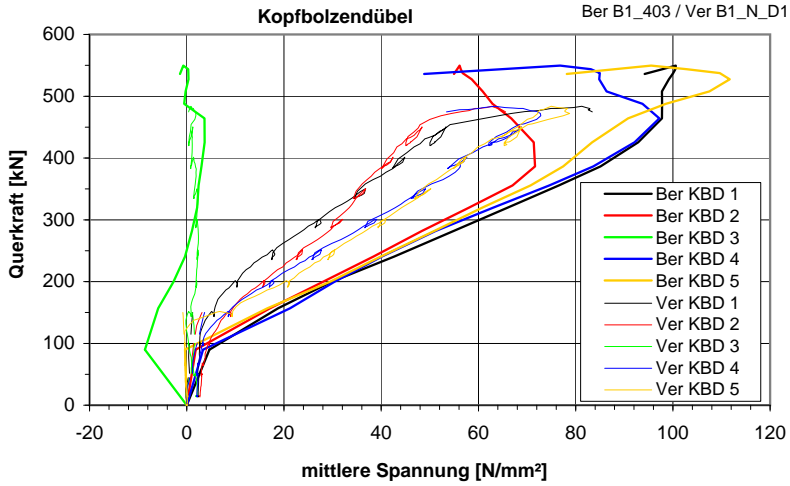


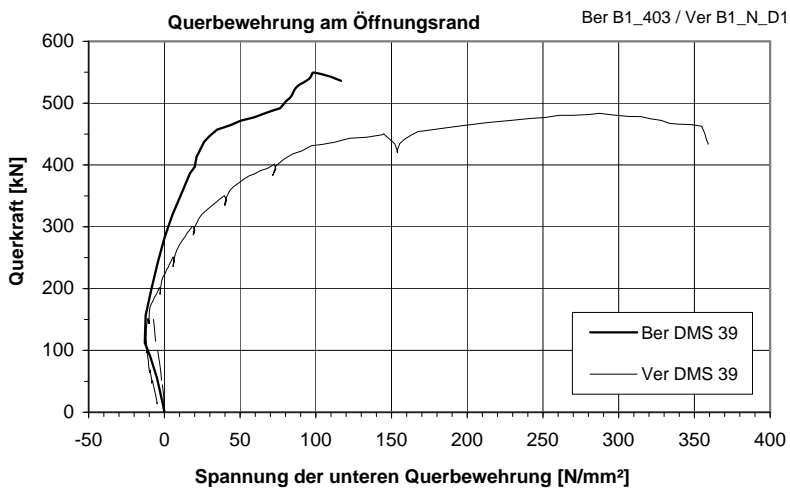
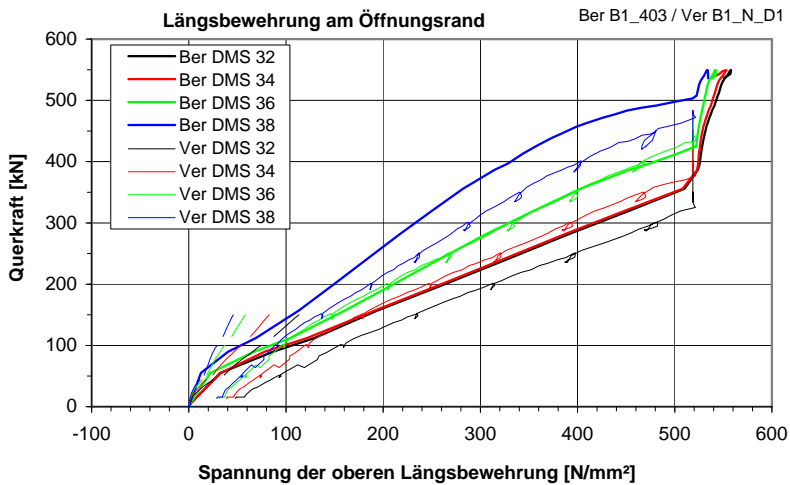
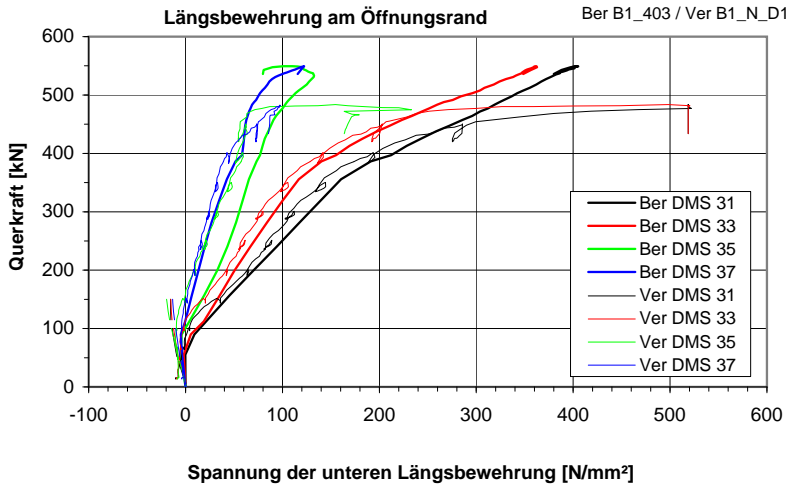


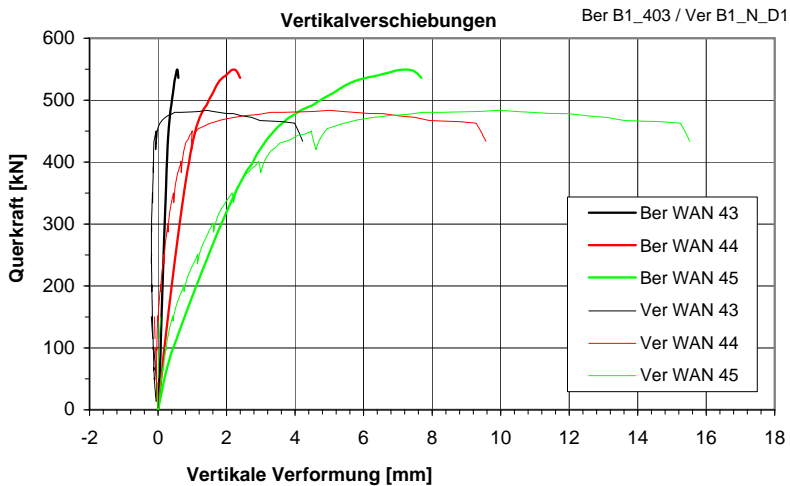
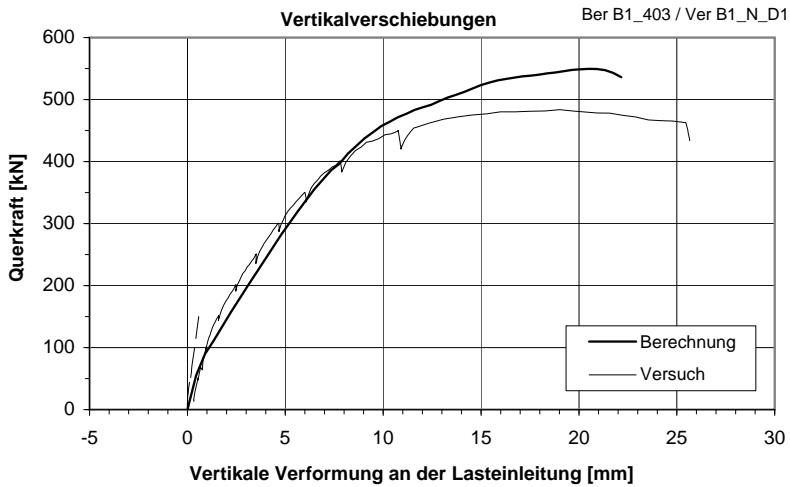
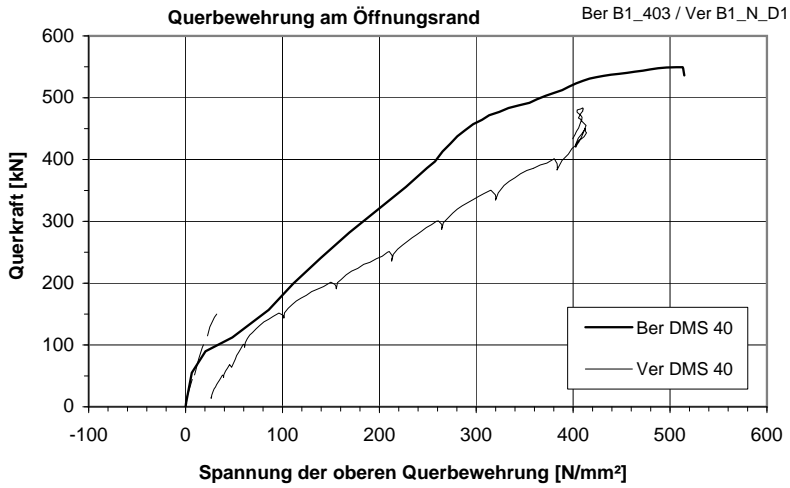


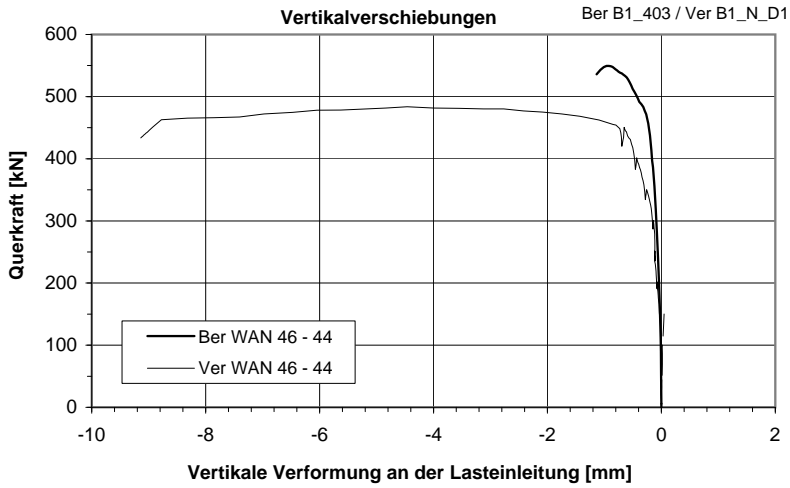


F.3. Versuch B1_N_D1

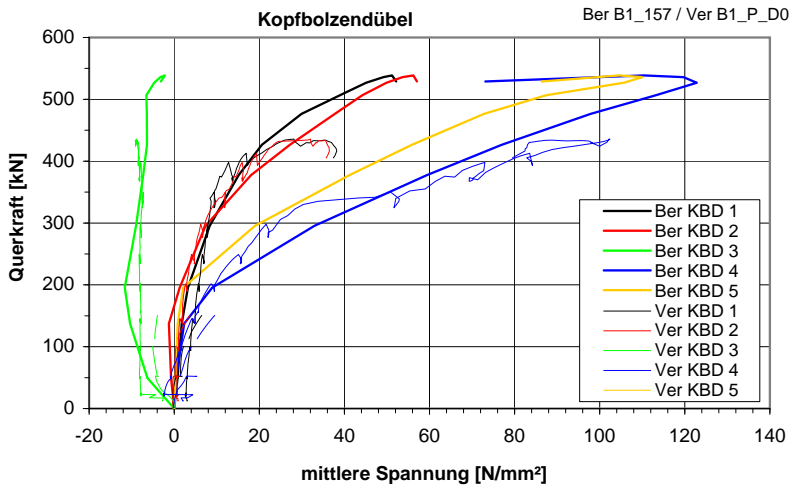


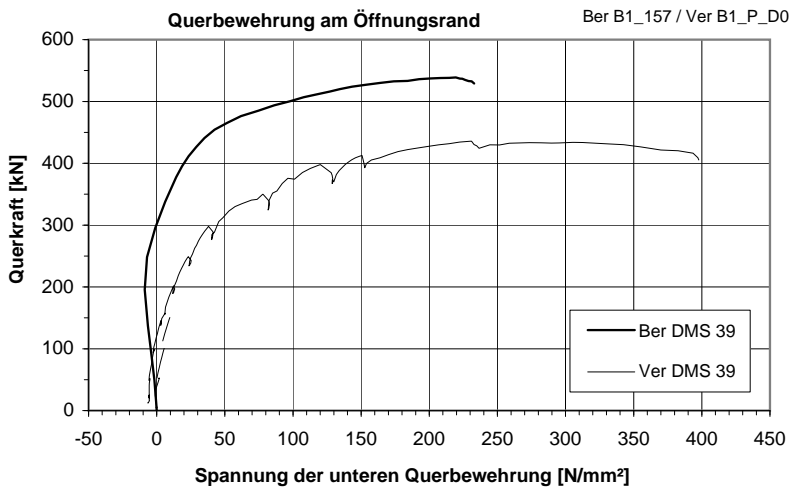
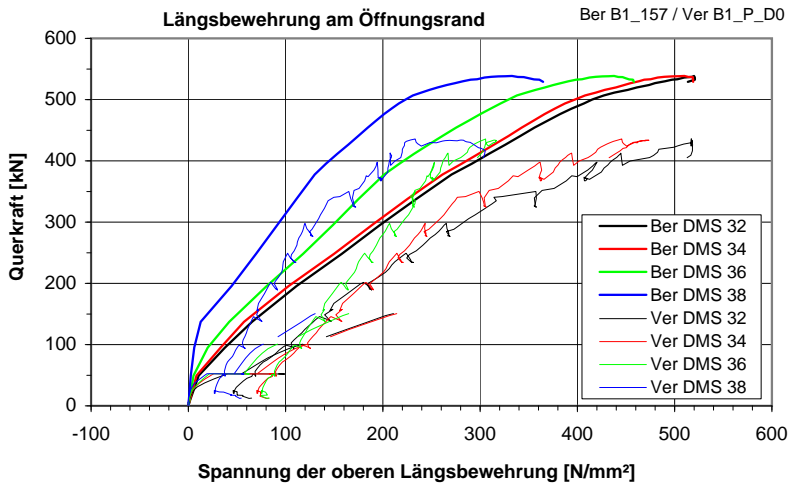
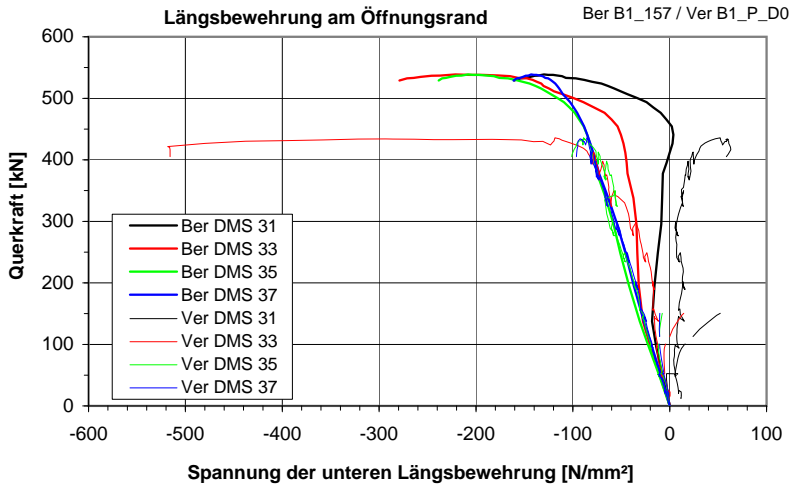


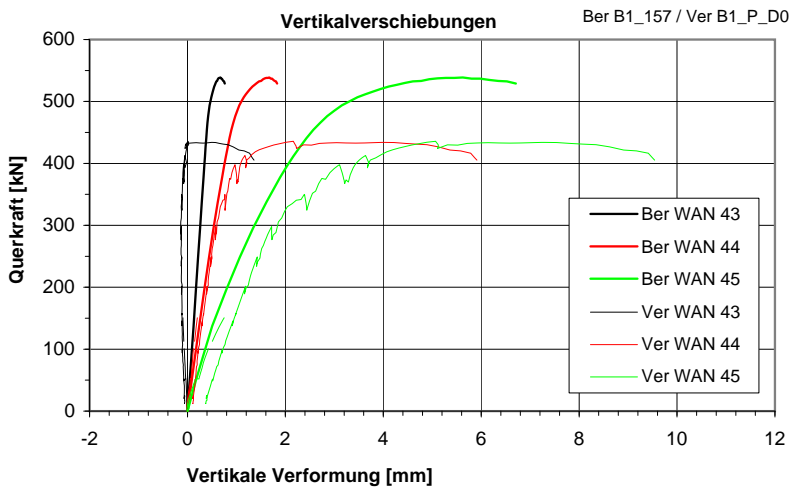
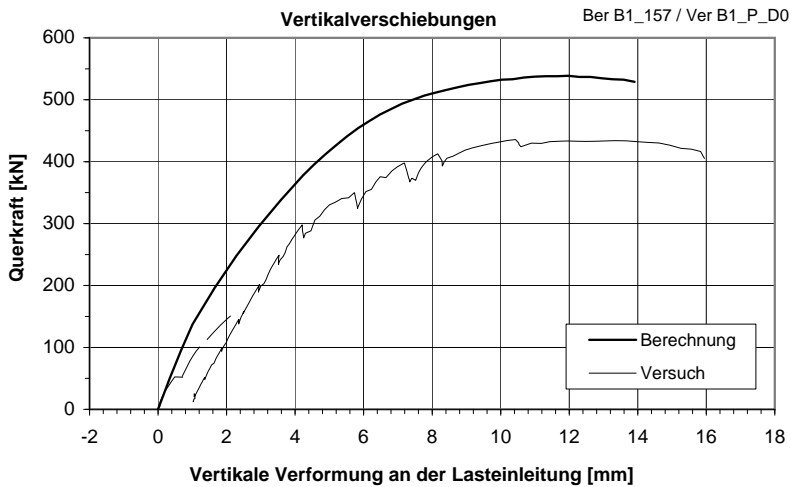
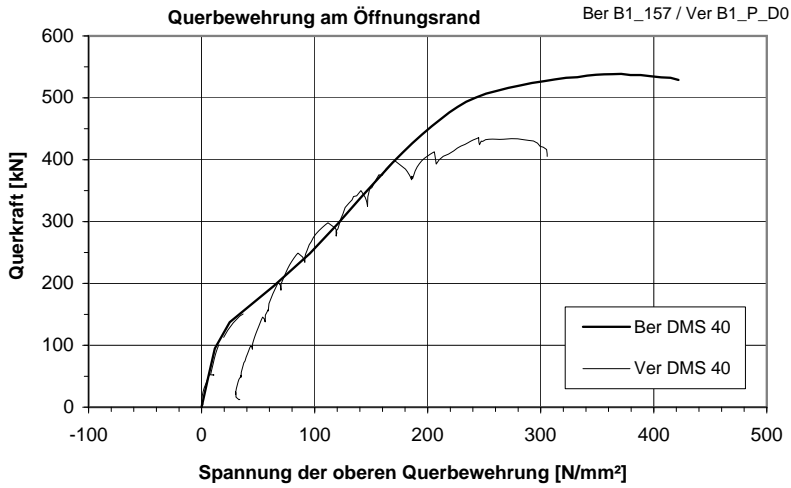


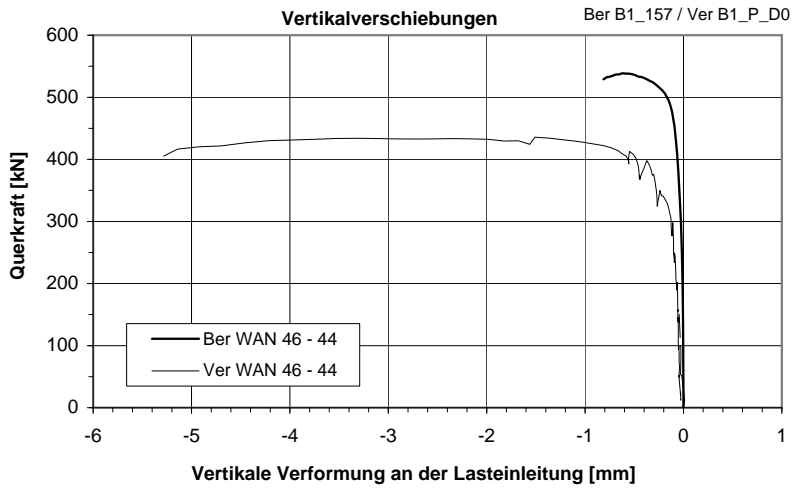


F.4. Versuch B1_P_D0

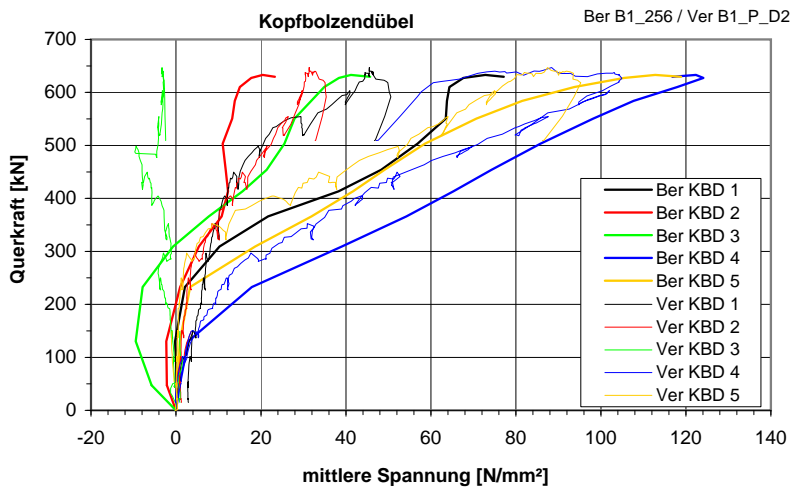


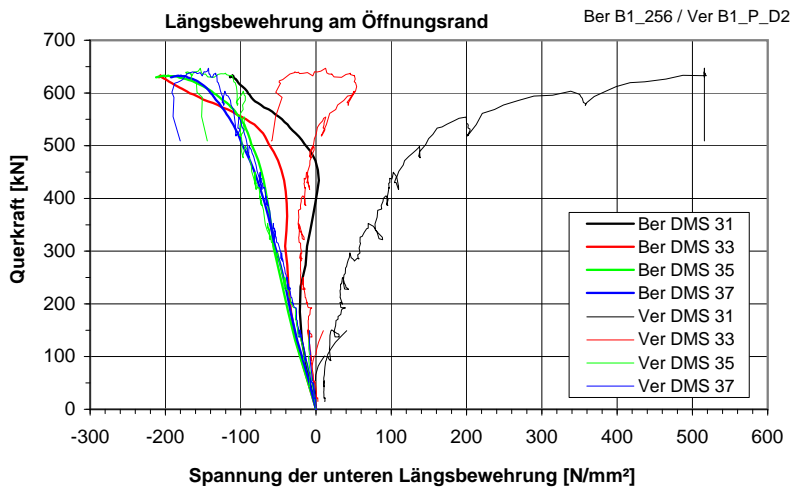
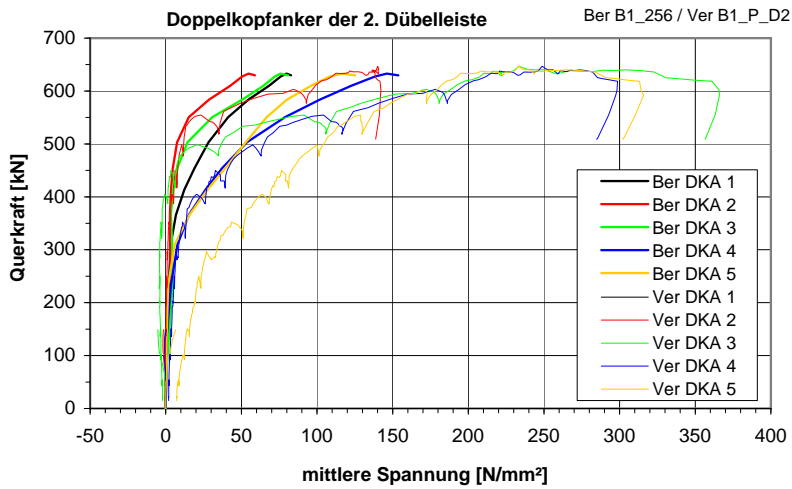
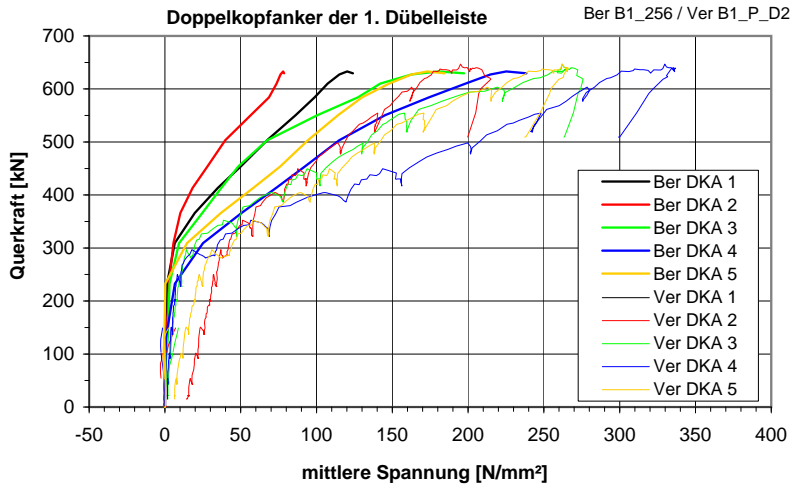


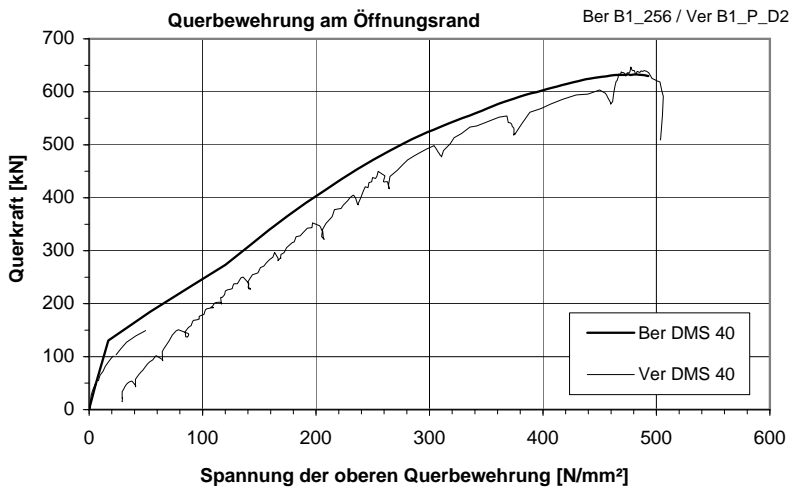
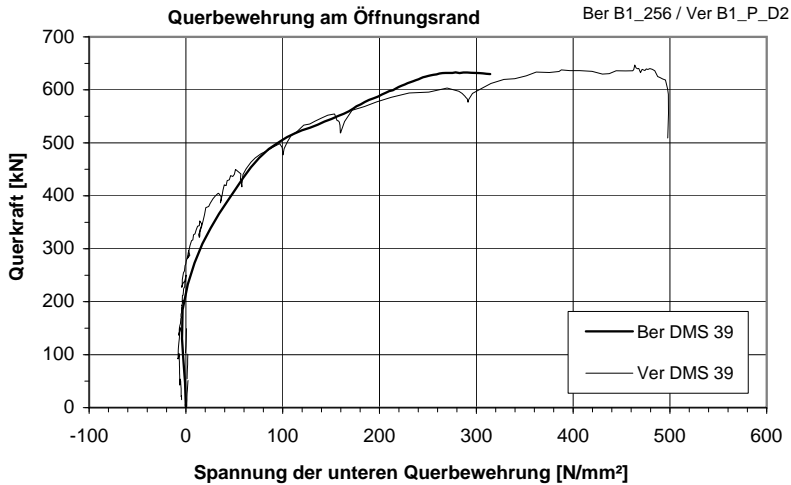
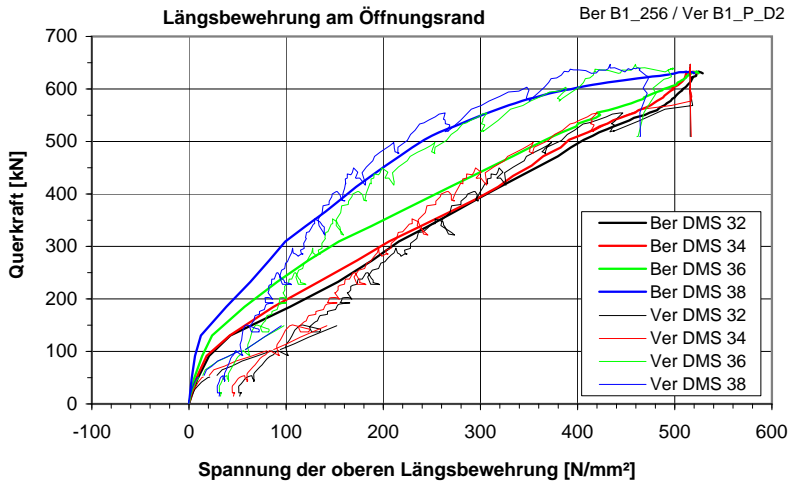


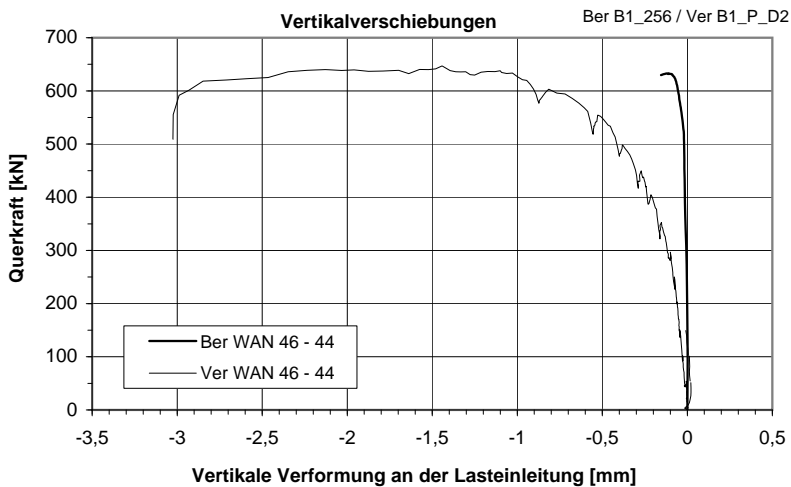
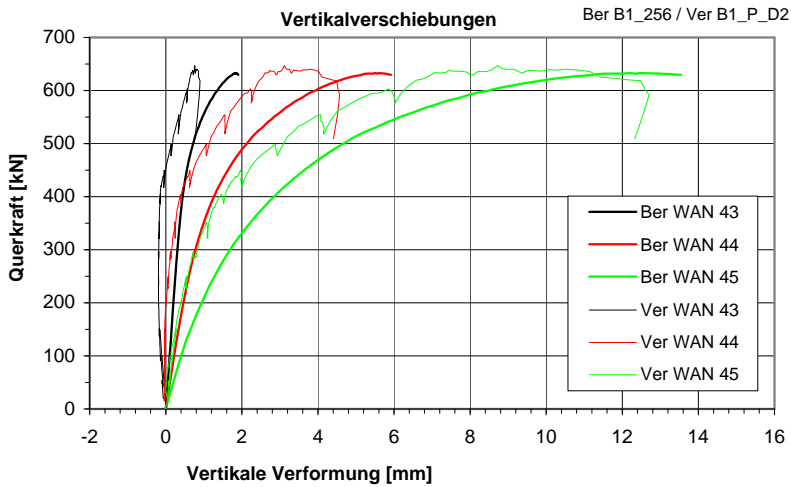
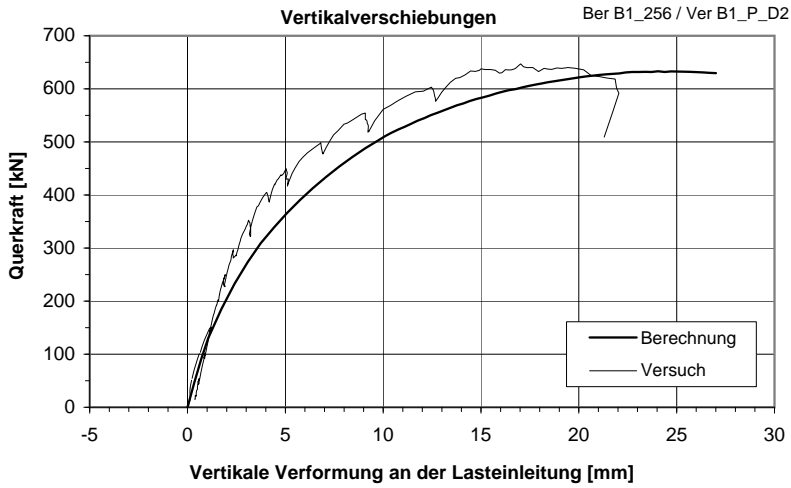


F.5. Versuch B1_P_D2

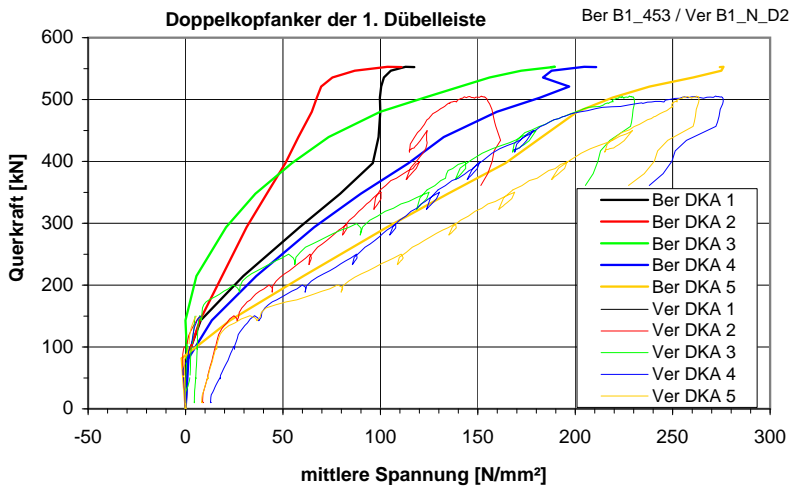
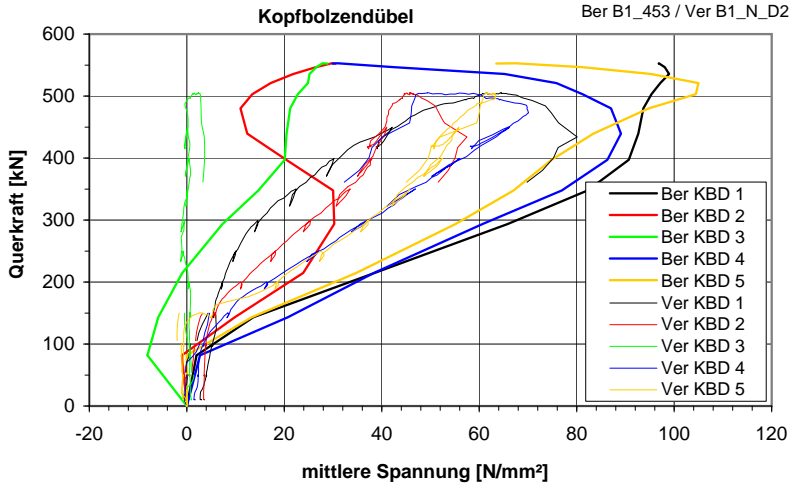


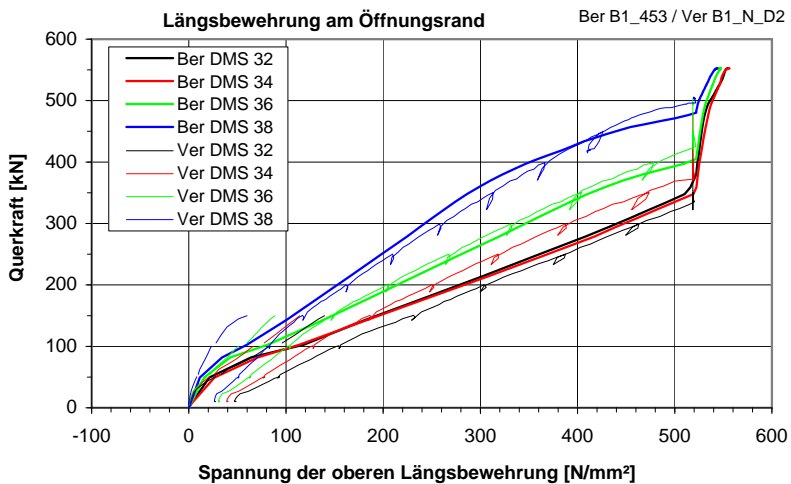
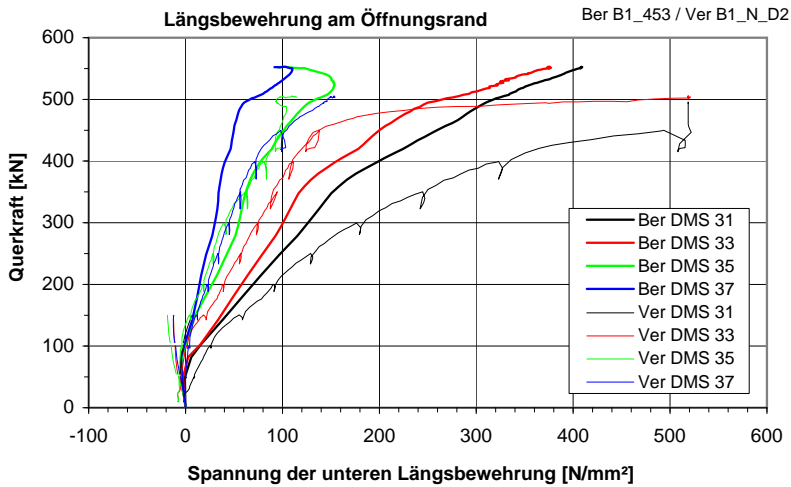
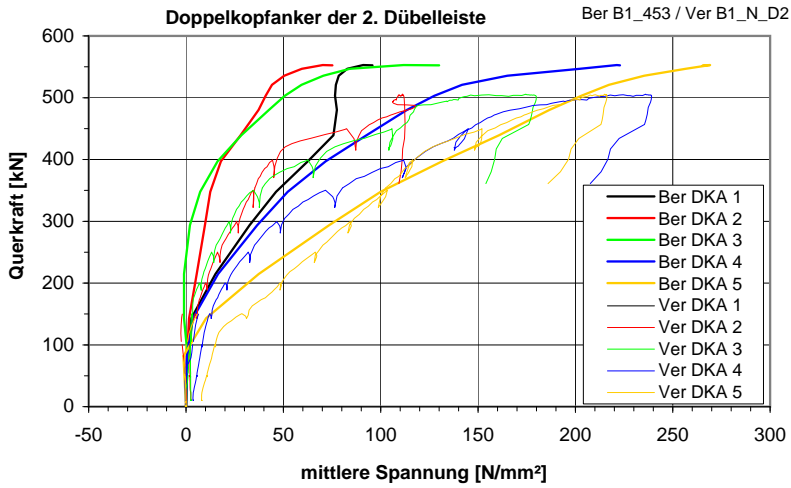


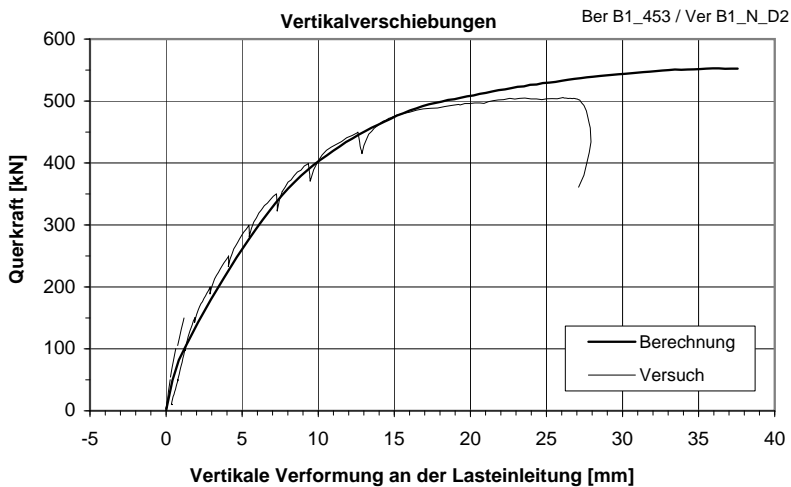
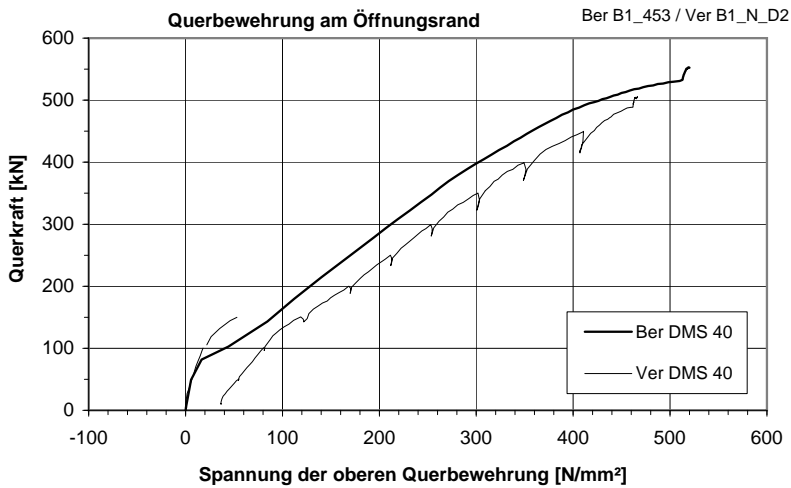
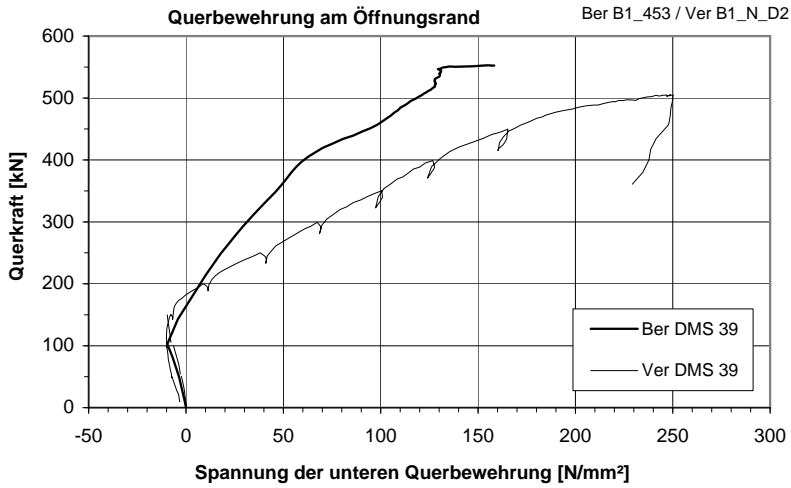


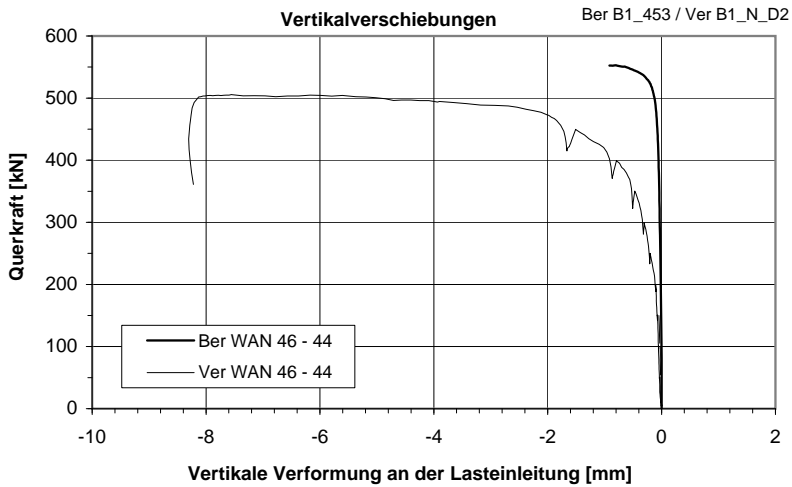
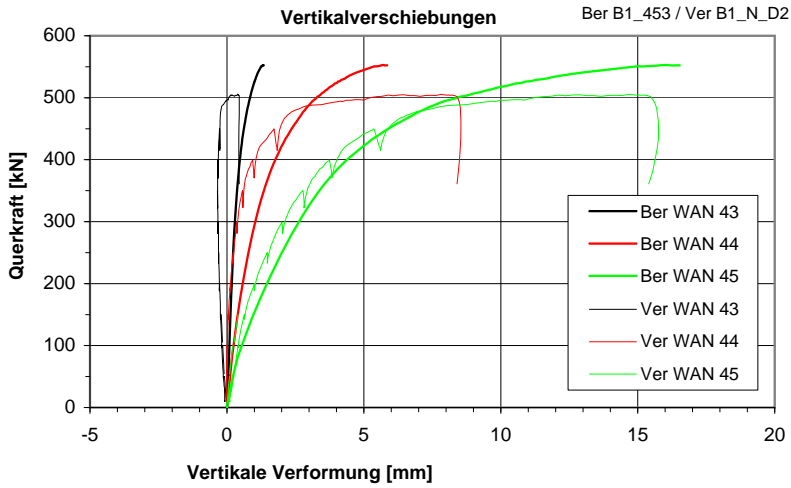


F.6. Versuch B1_N_D2

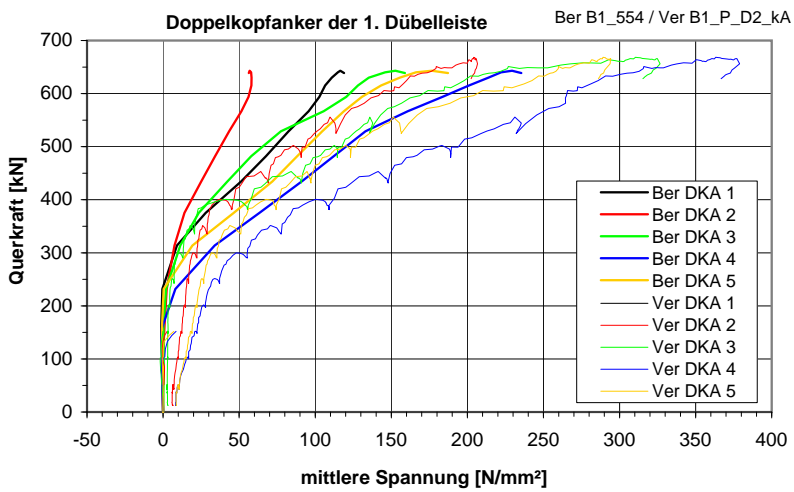
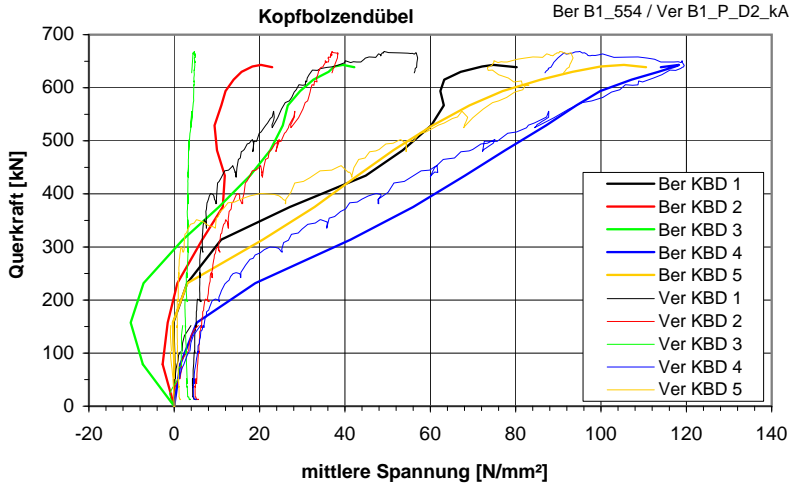


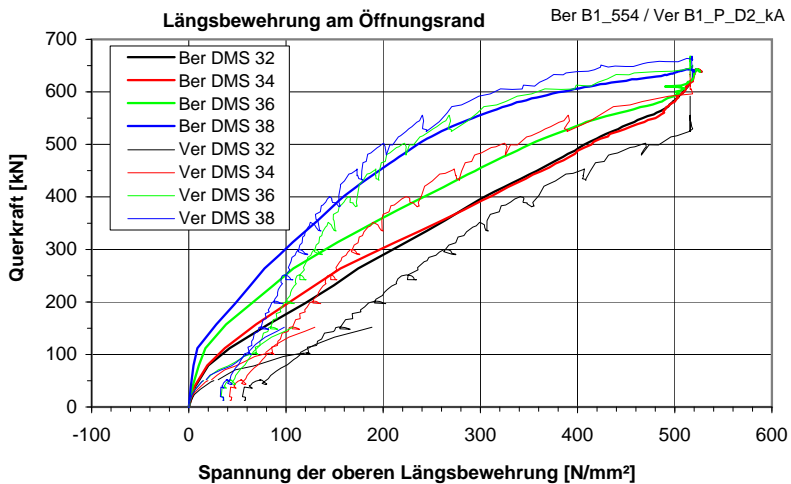
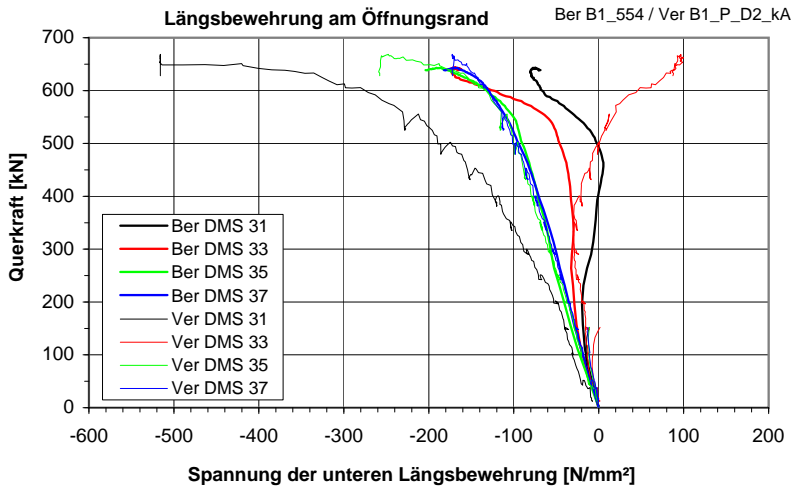
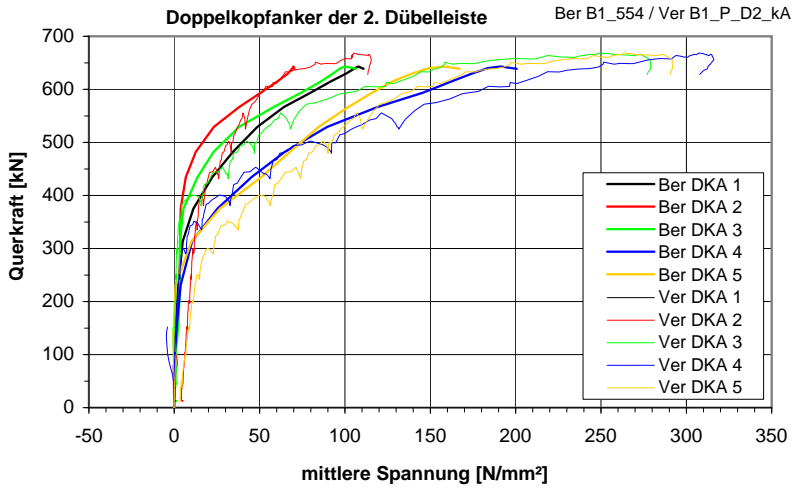


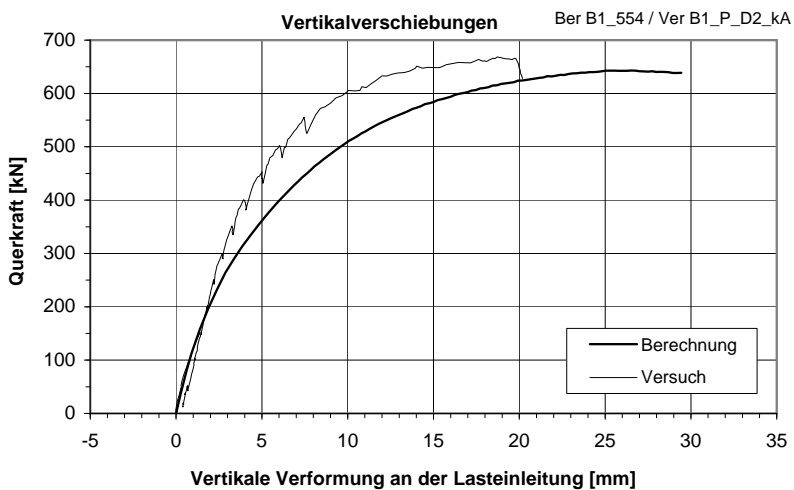
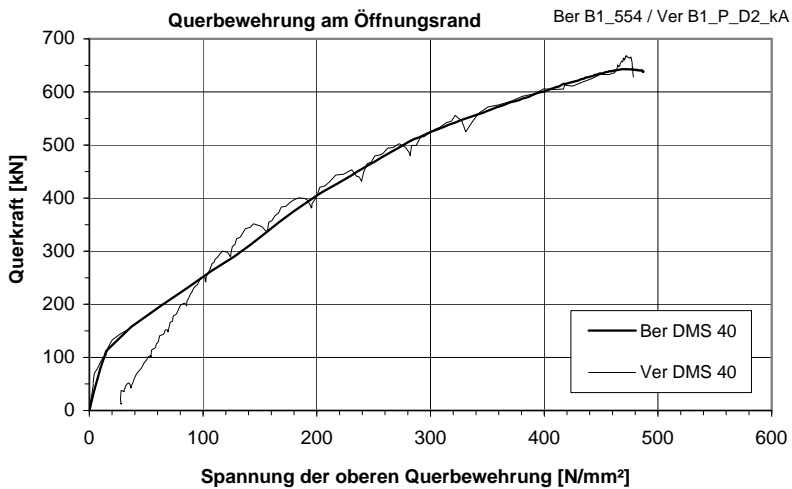
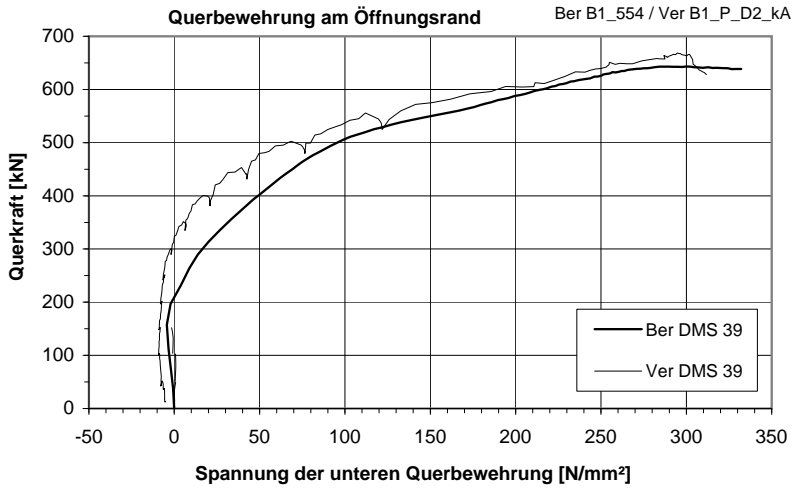


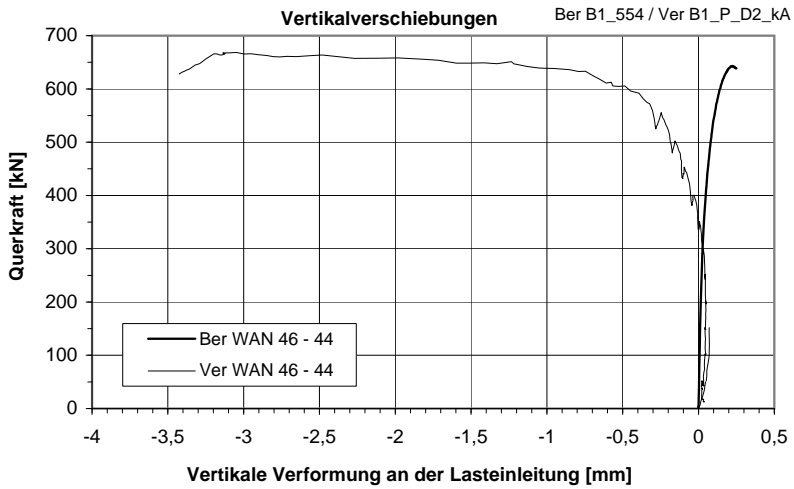
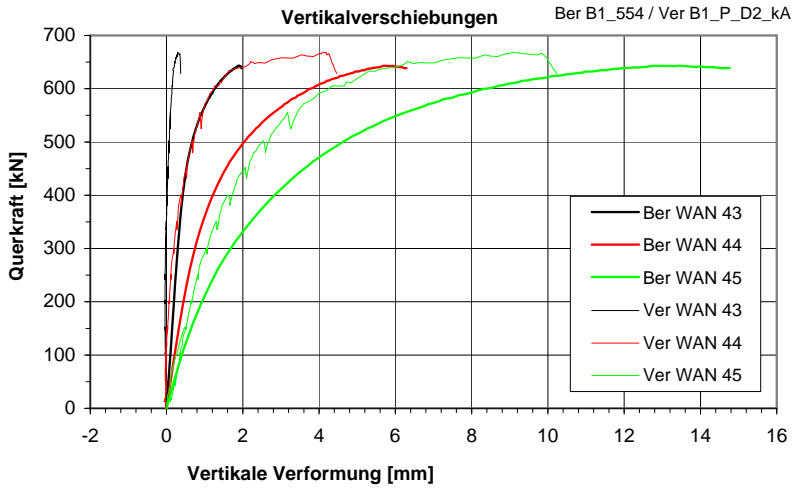


F.7. Versuch B1_P_D2_kA

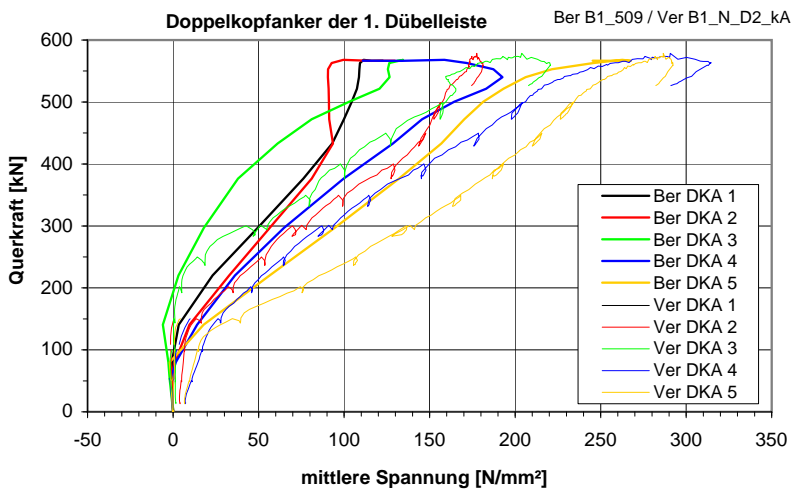
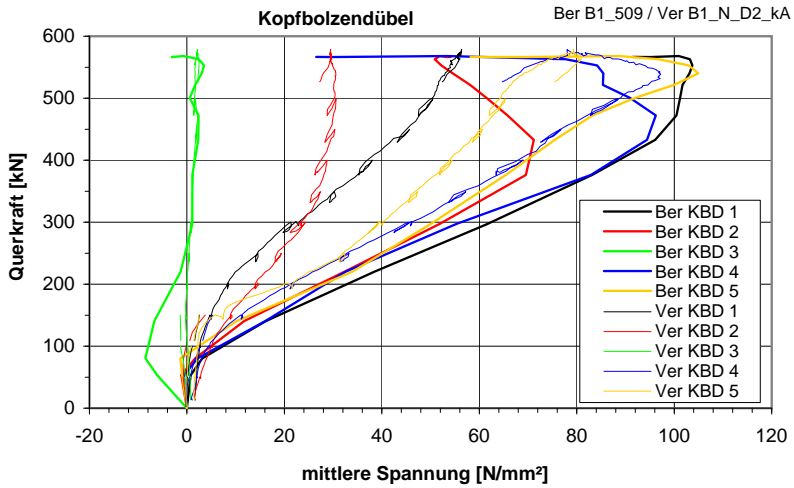


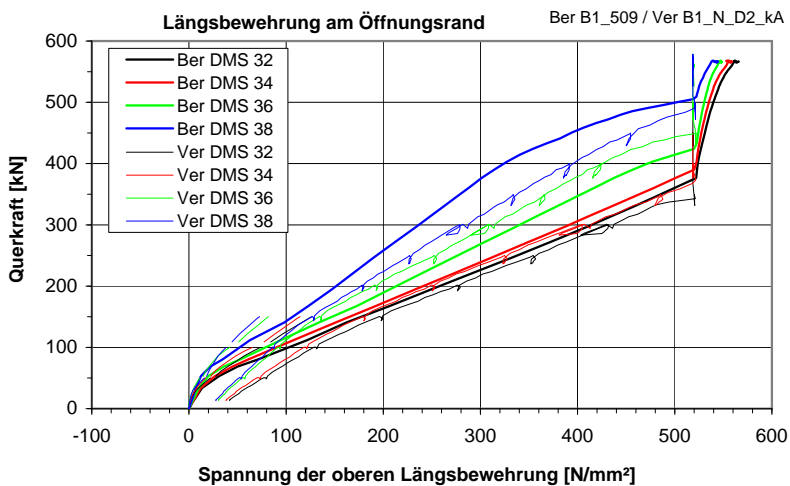
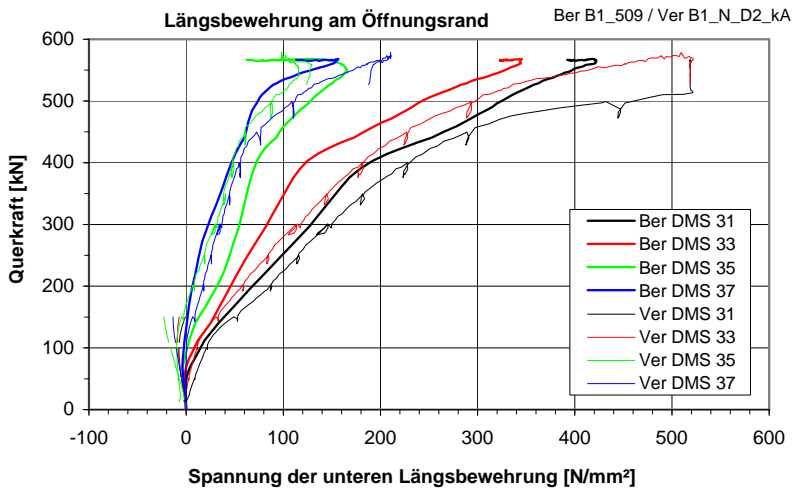
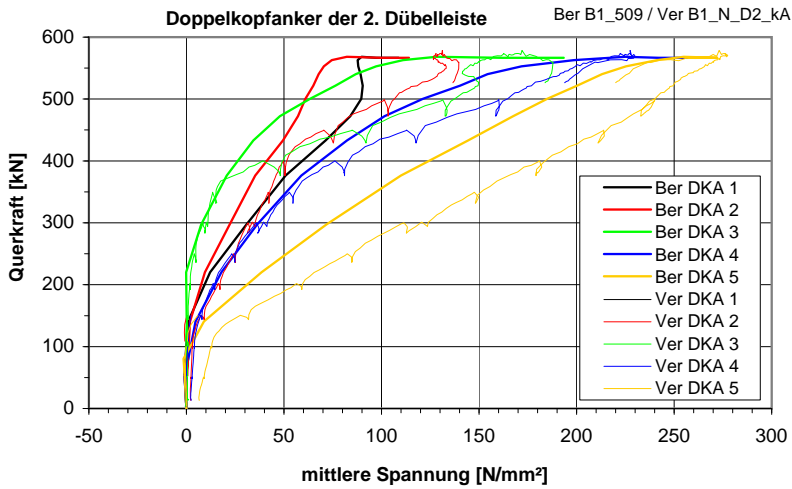


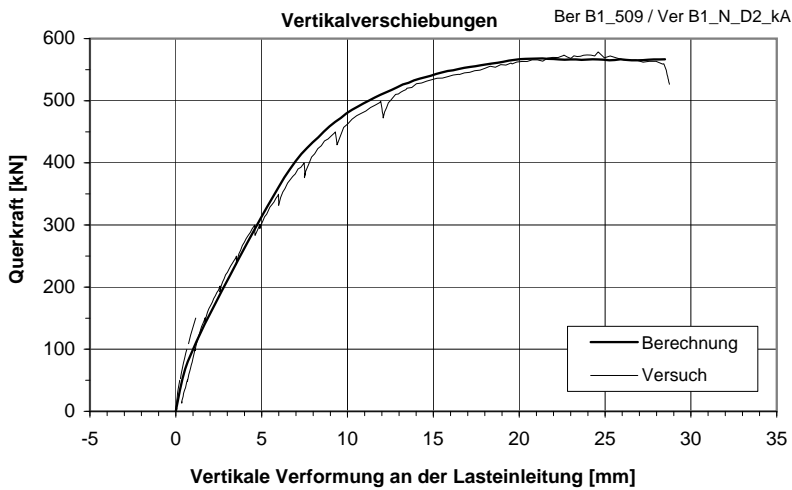
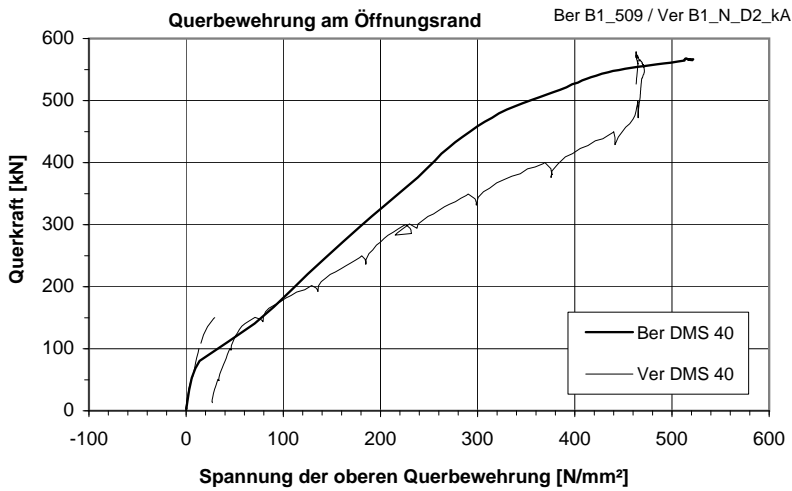
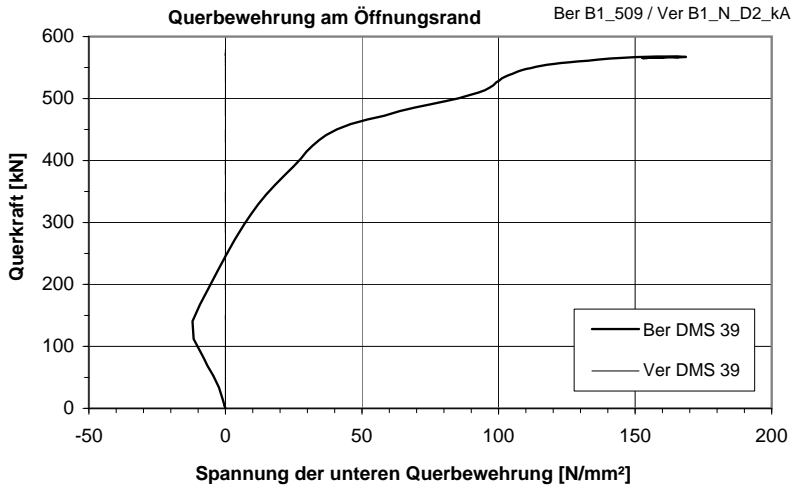


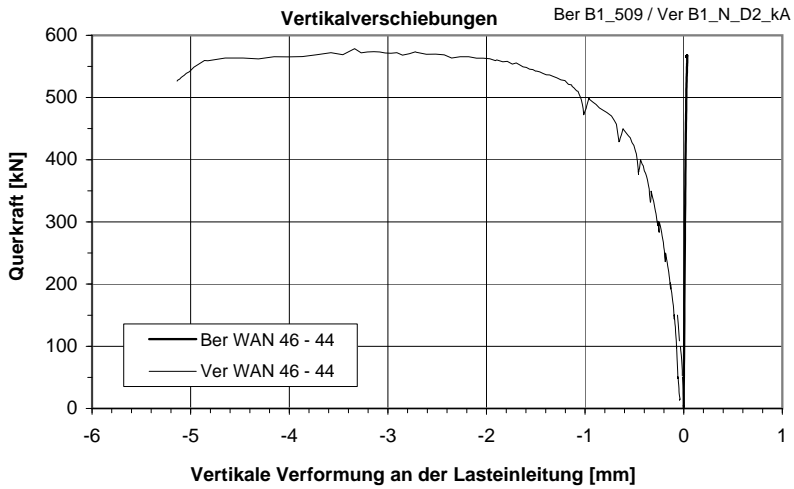
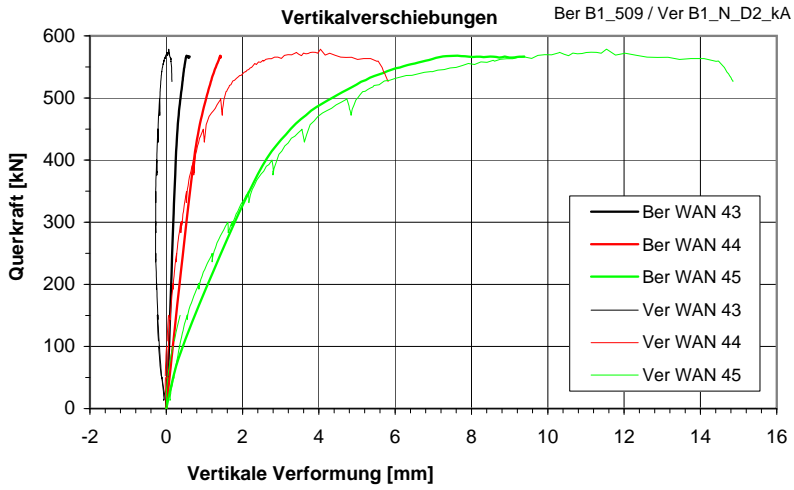


F.8. Versuch B1_N_D2_kA

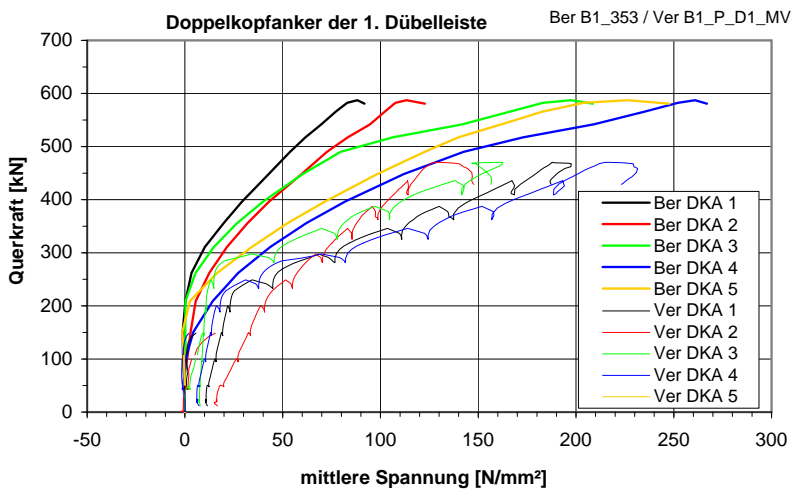
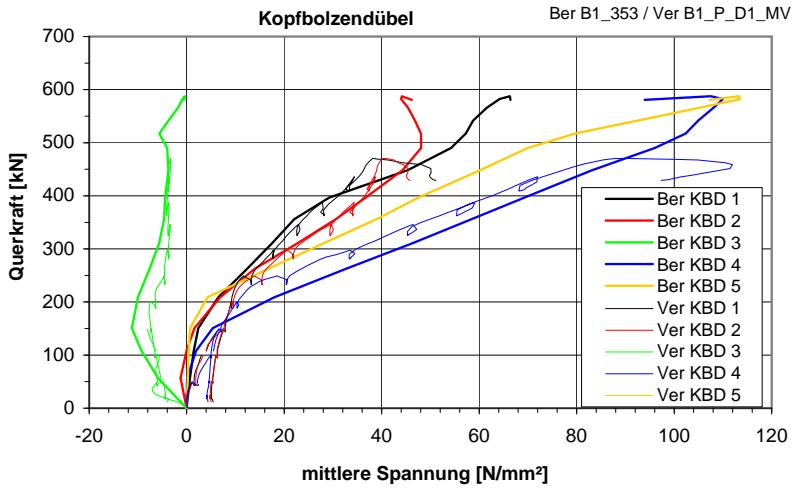


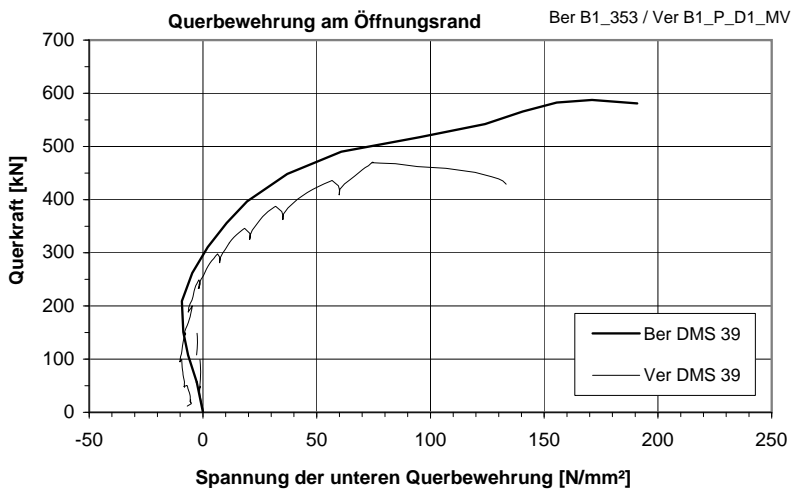
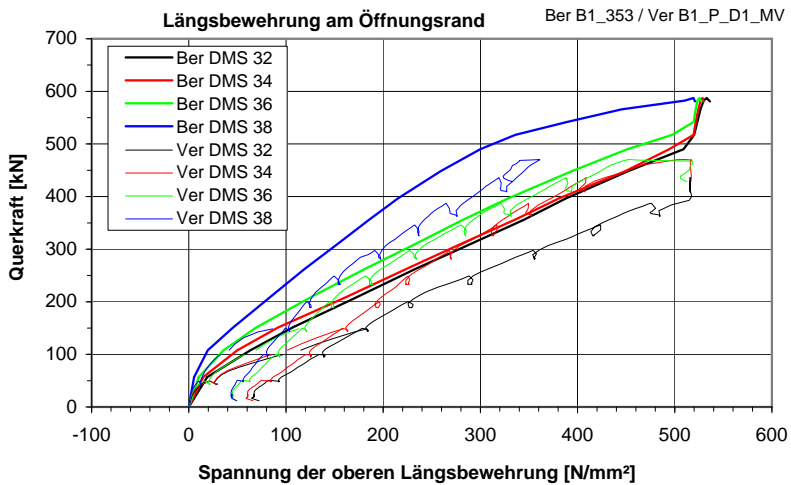
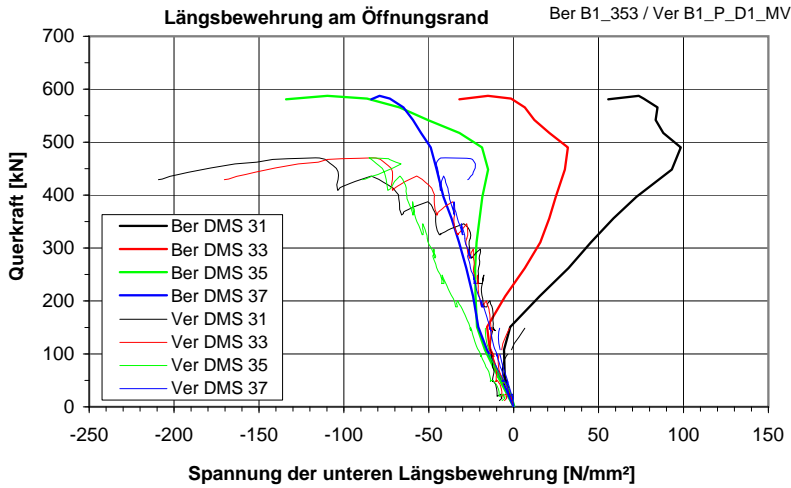


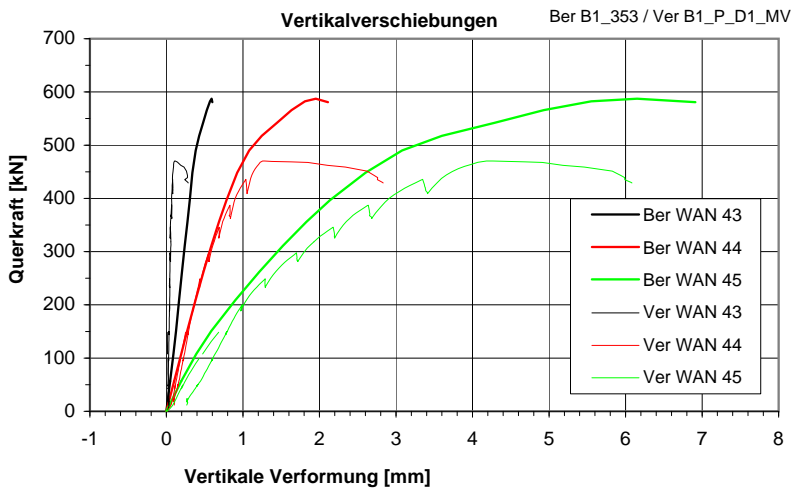
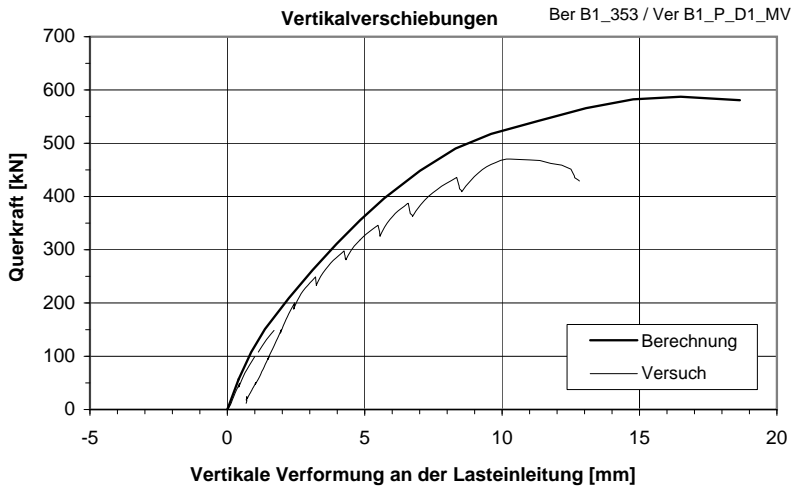
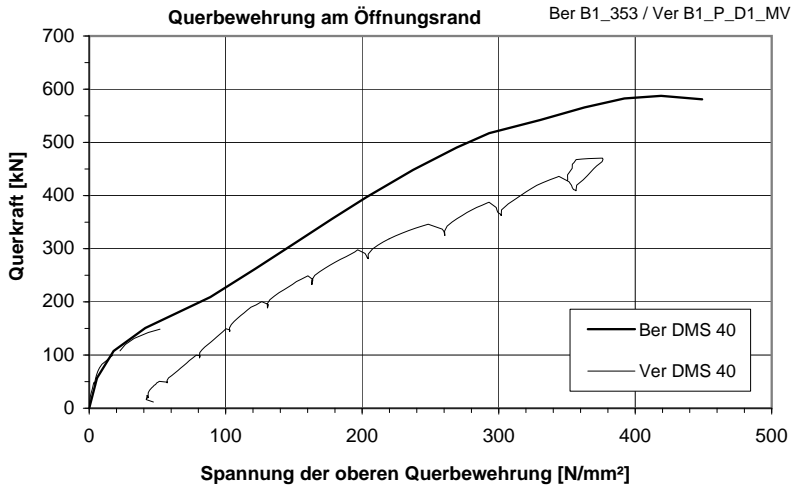


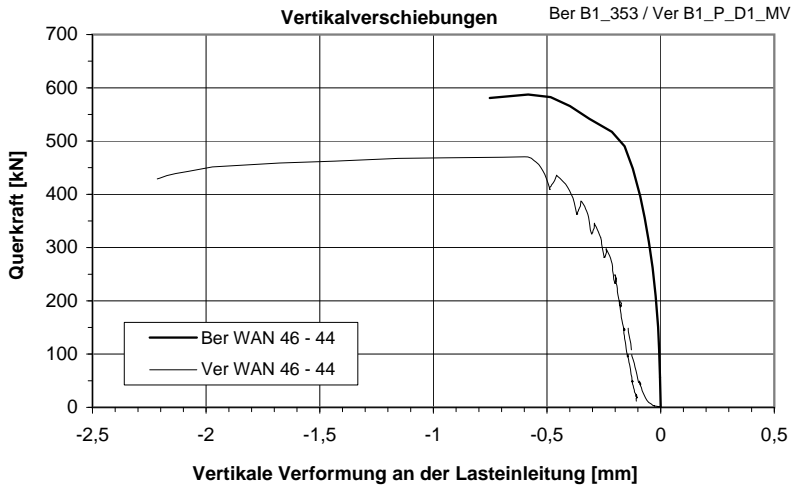


F.9. Versuch B1_P_D1_MV

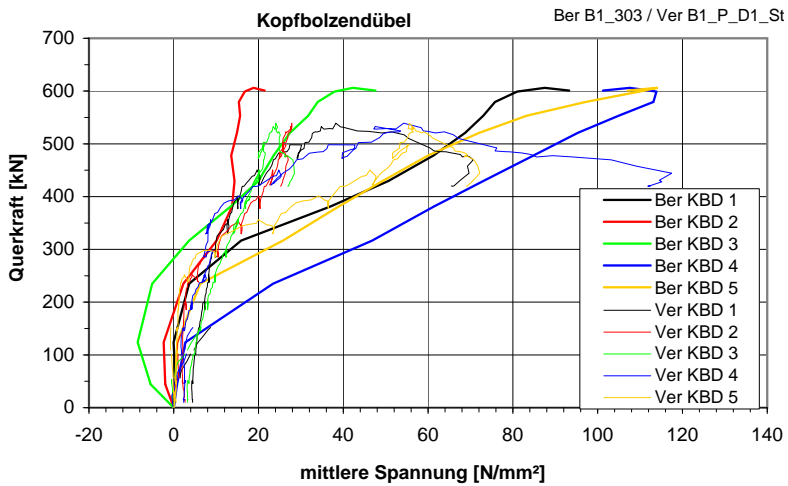


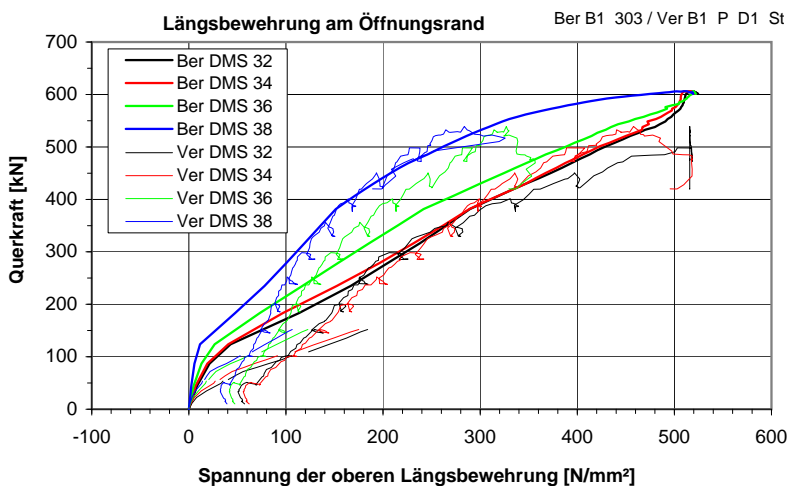
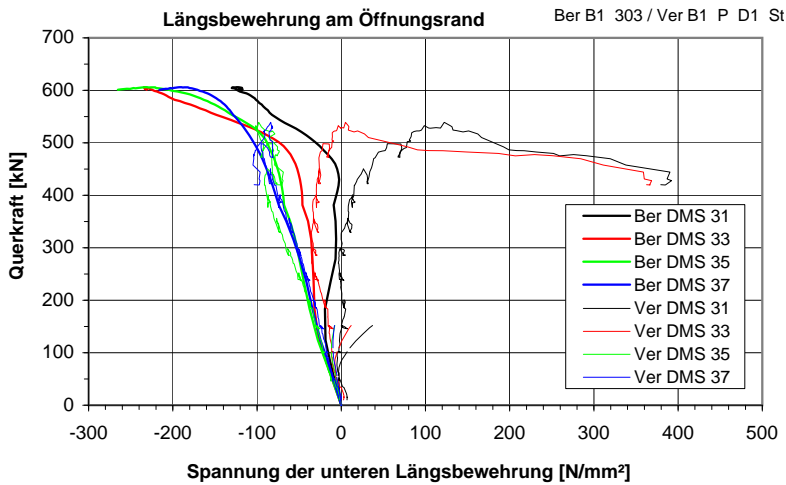
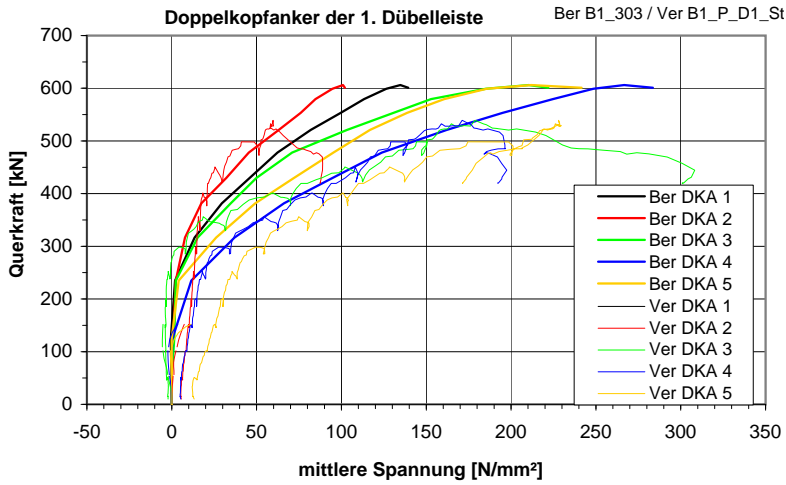


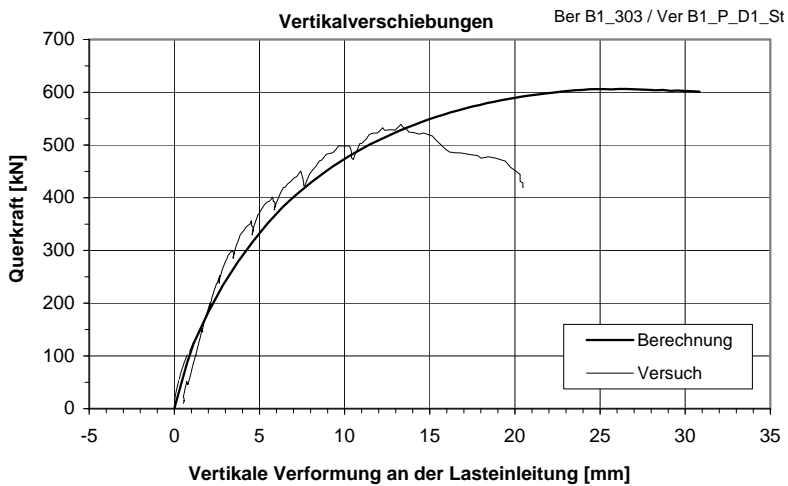
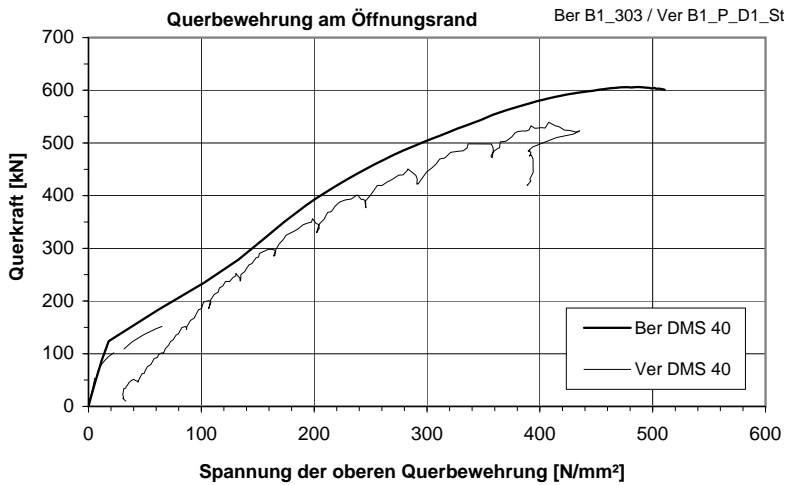
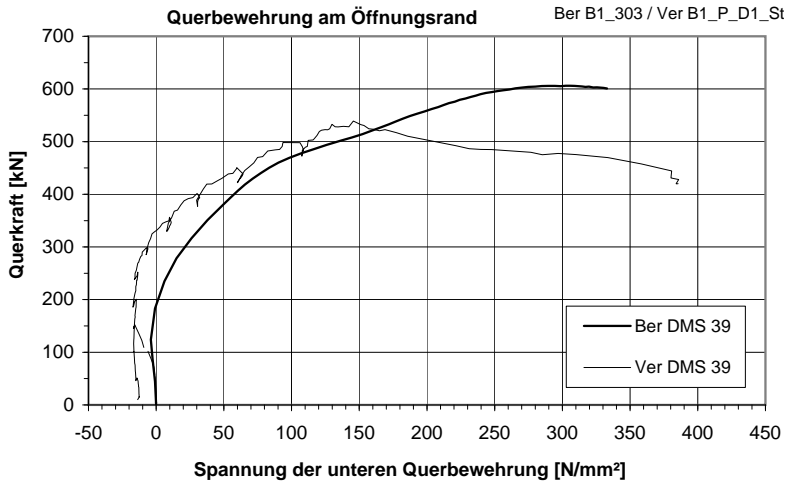


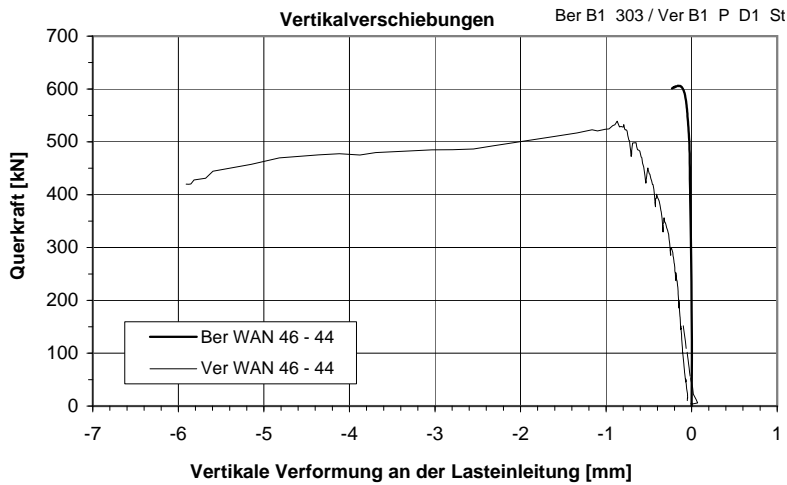
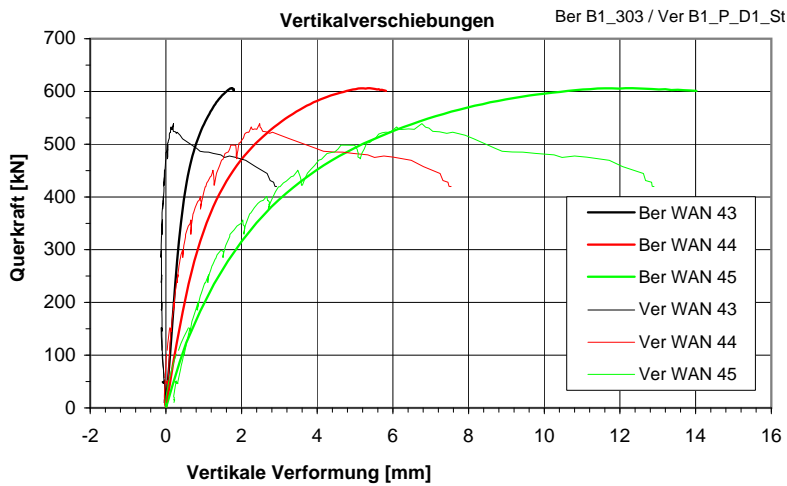


F.10. Versuch B1_P_D1_St

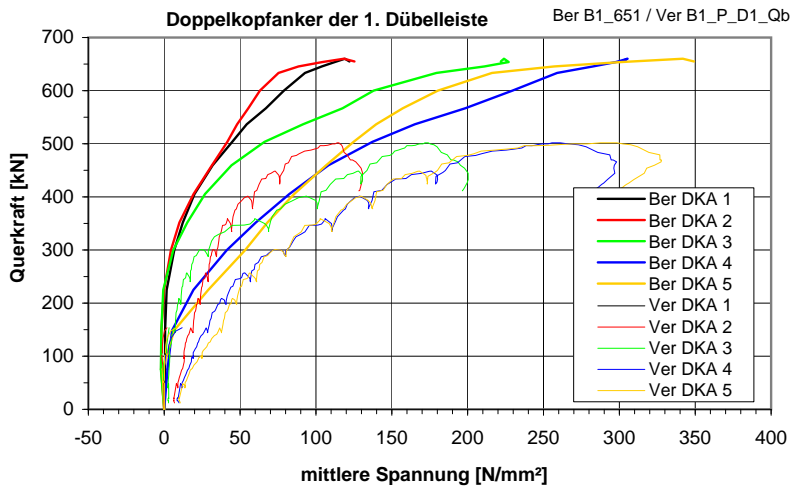
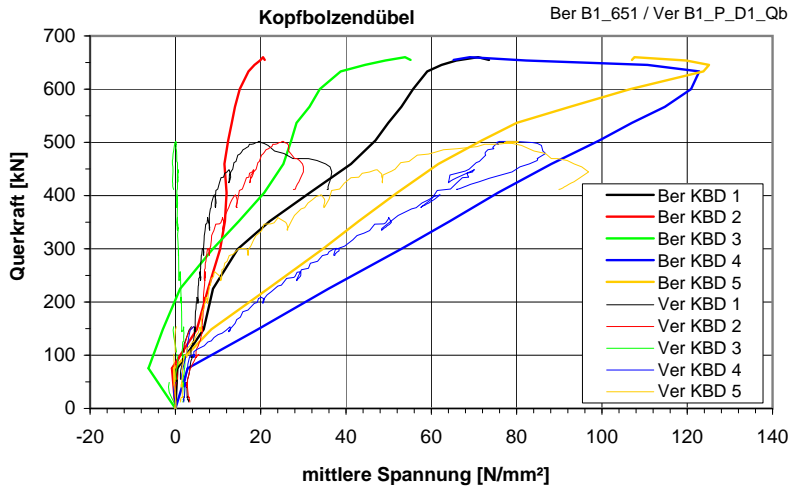


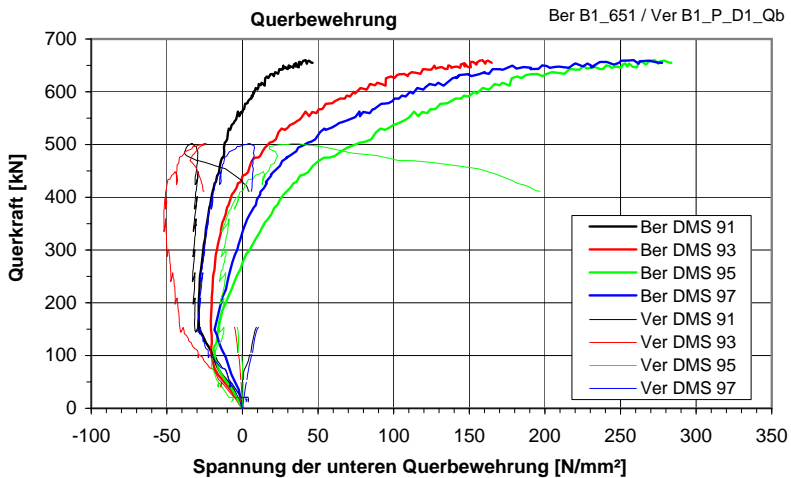
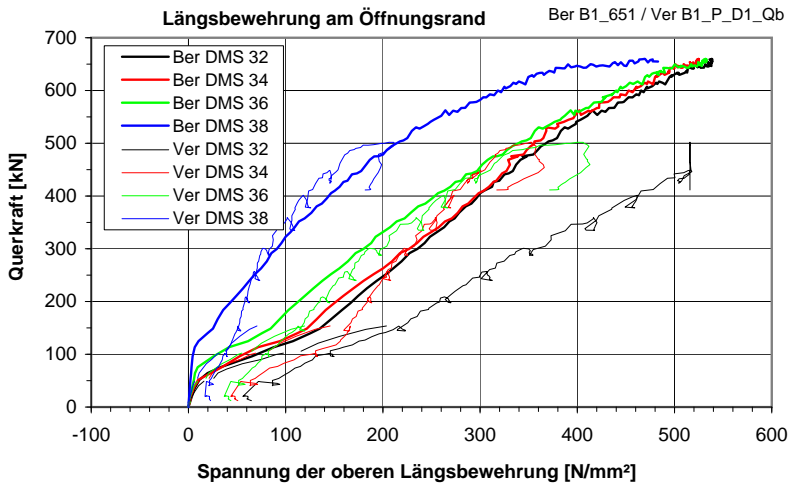
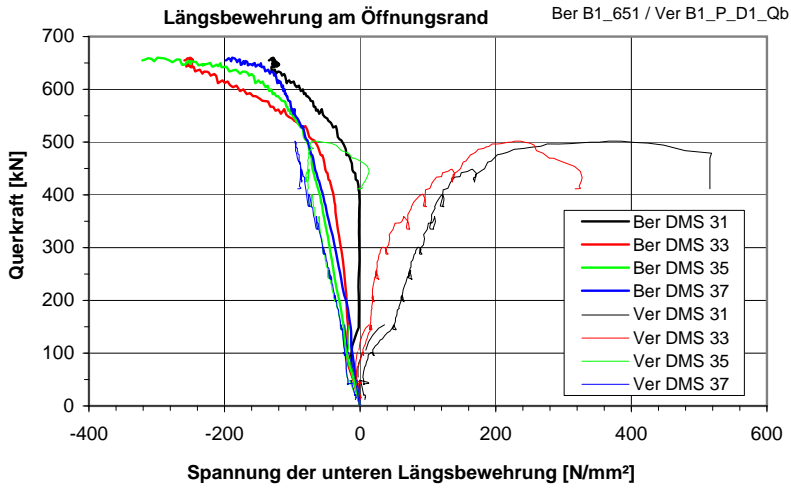


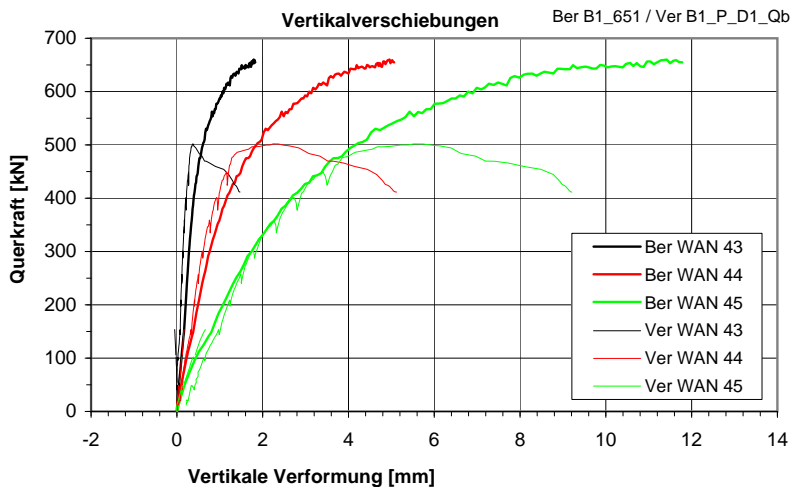
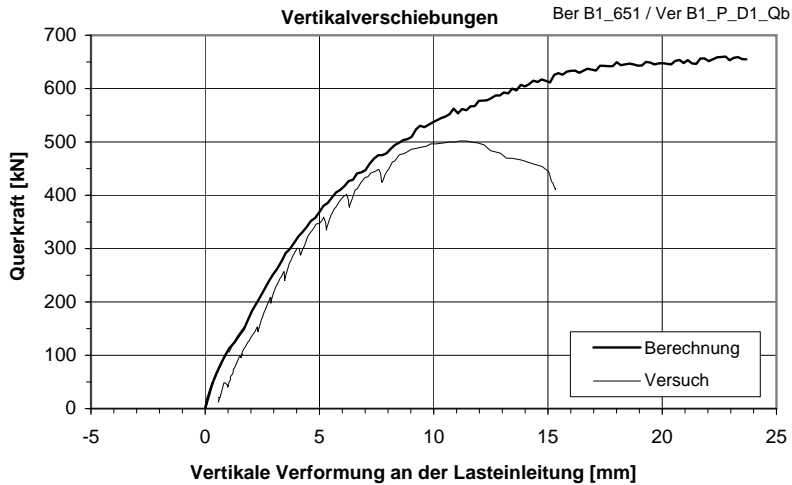
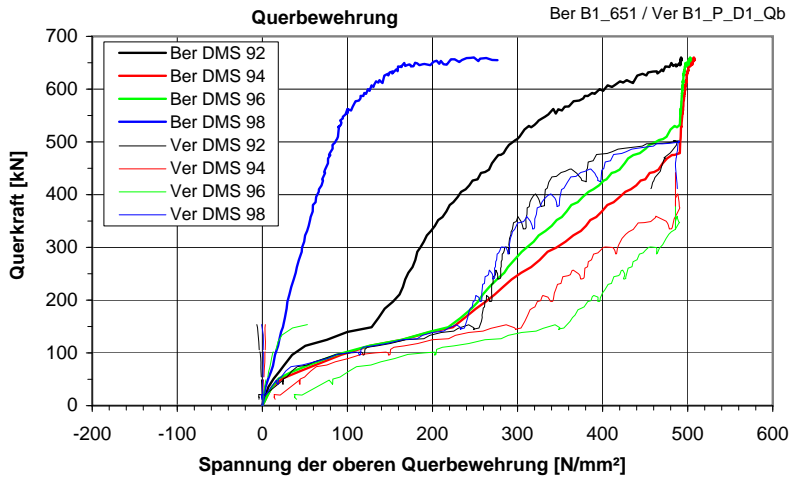


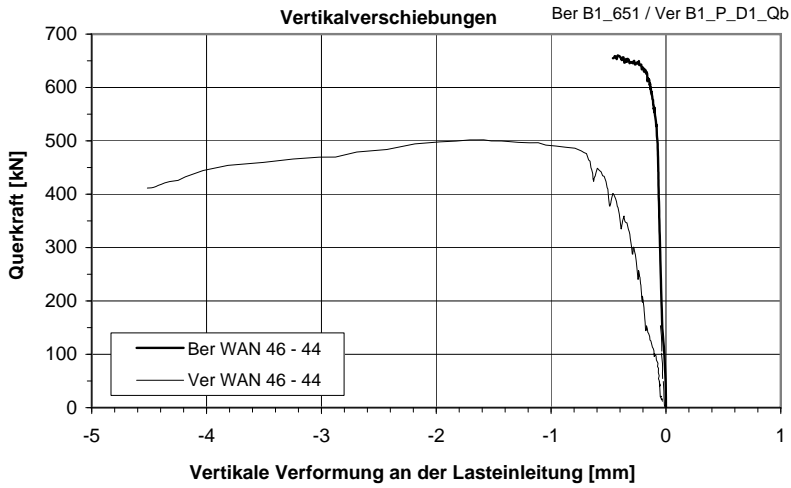


F.11. Versuch B1_P_D1_Qb

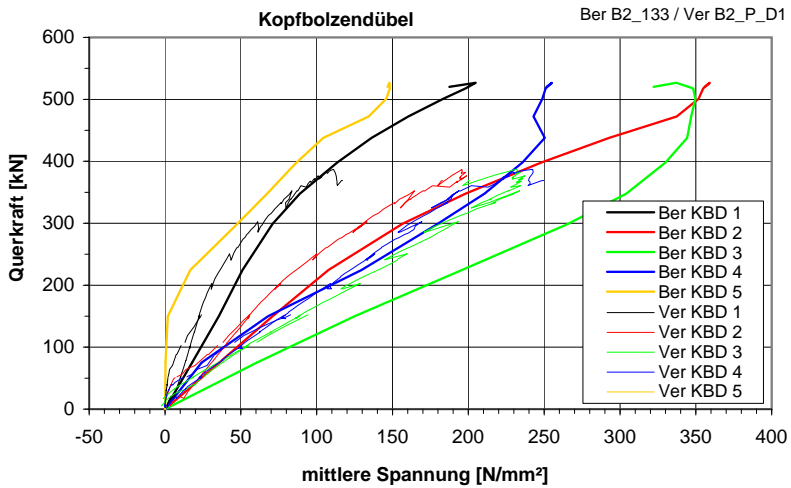


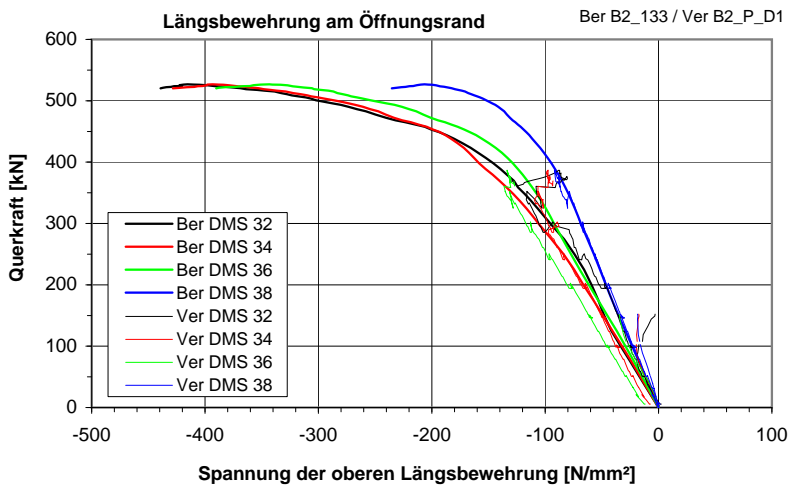
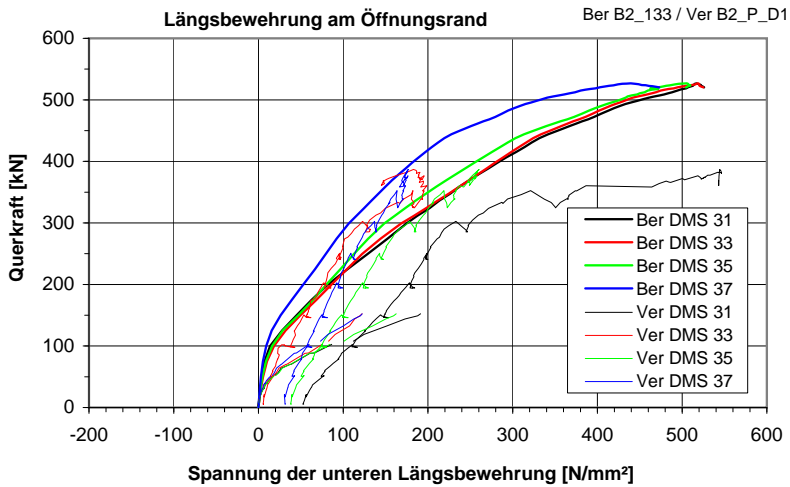
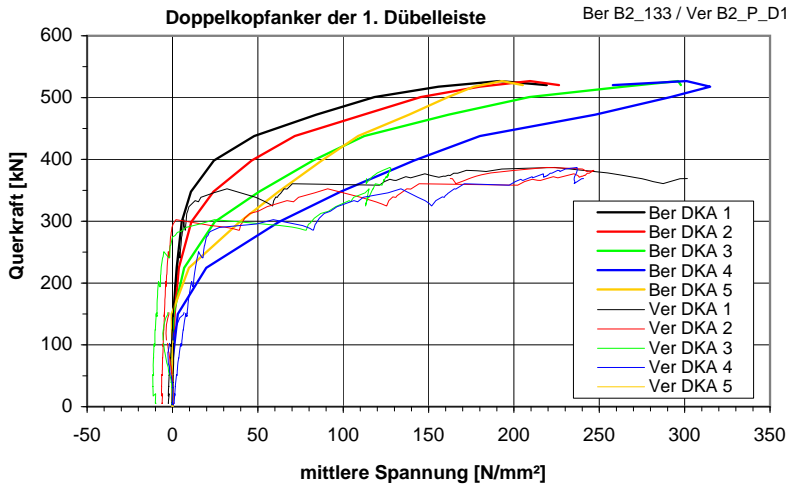


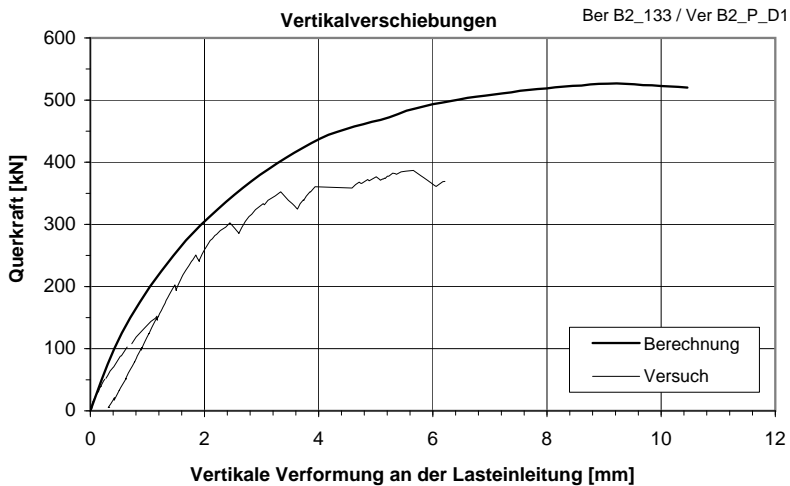
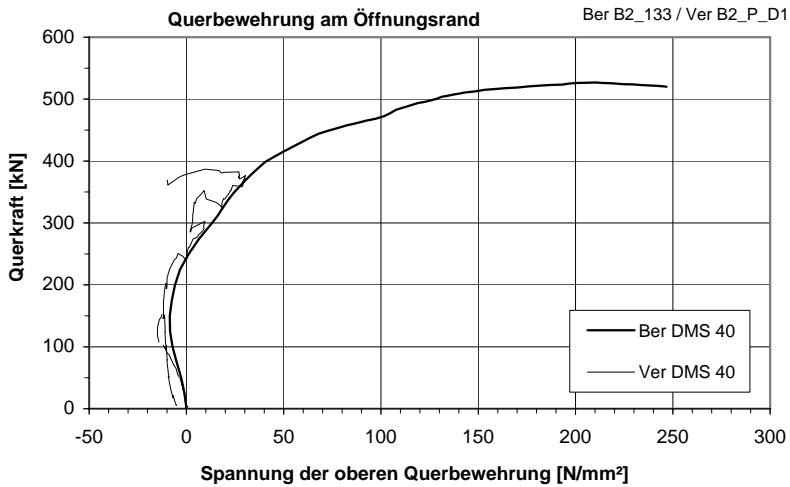
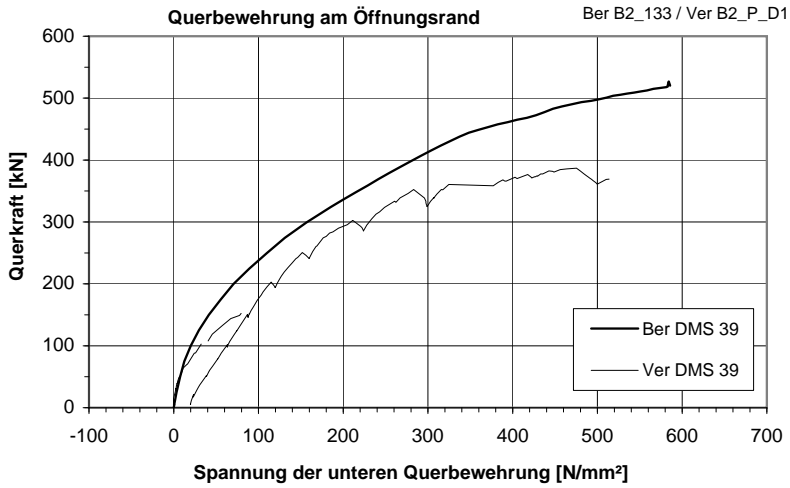


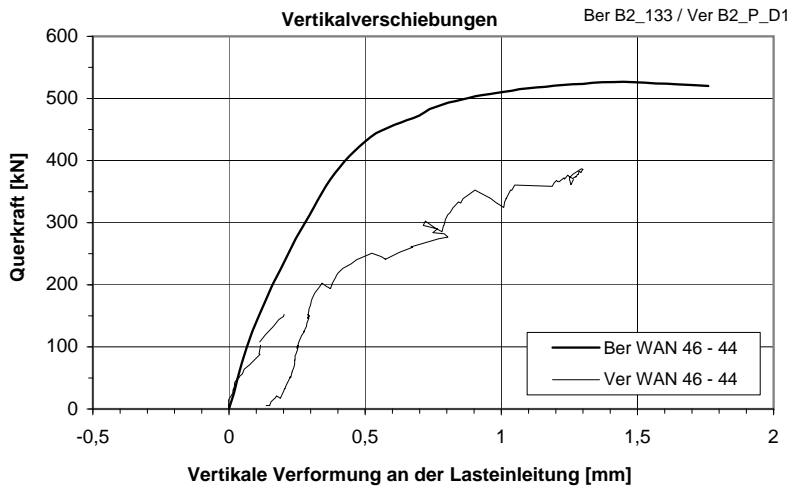
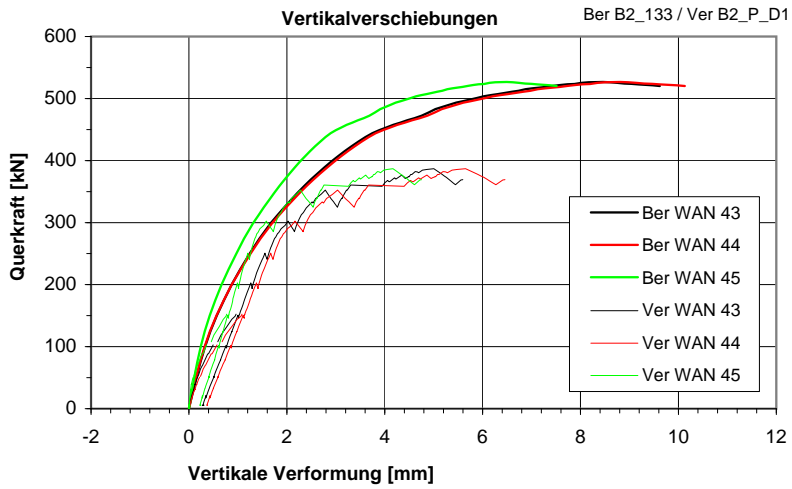


F.12. Versuch B2_P_D1

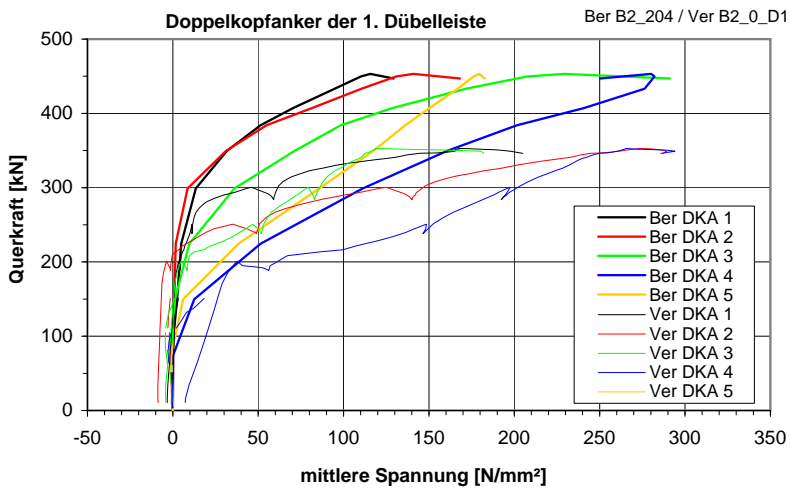
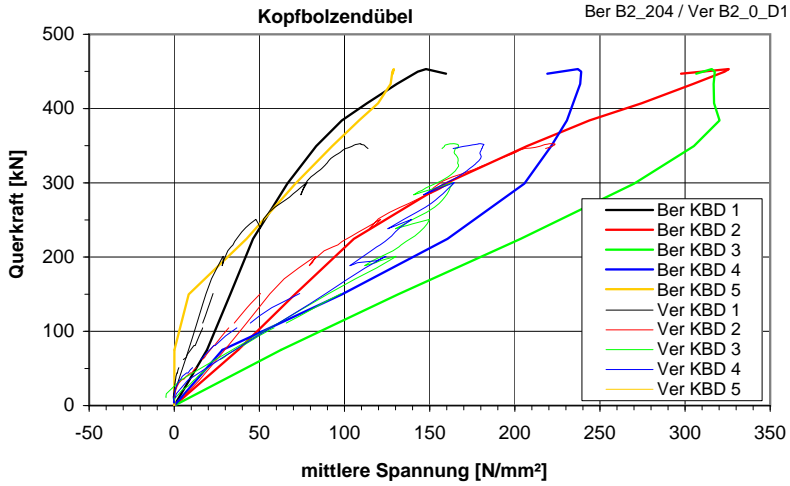


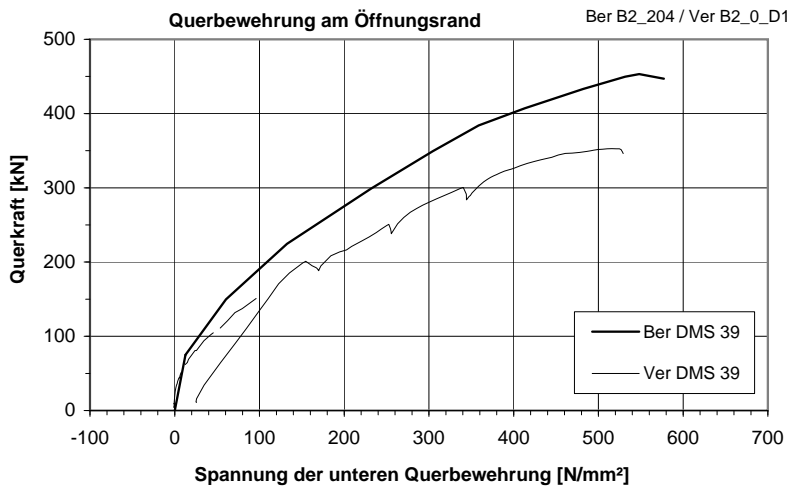
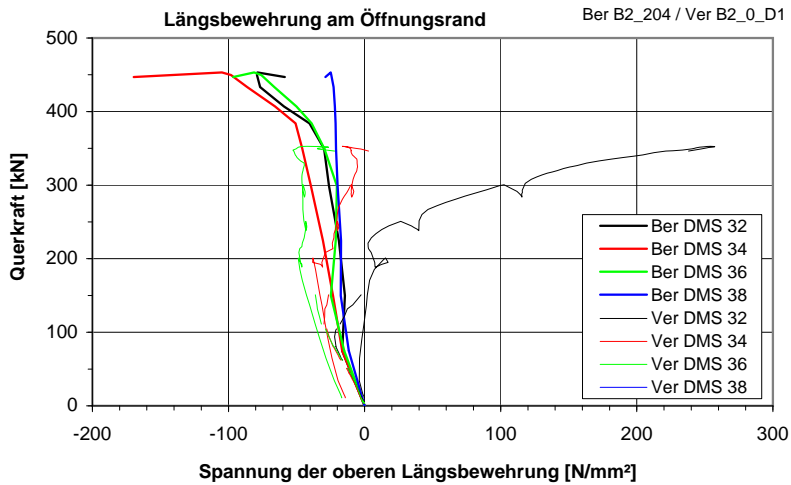
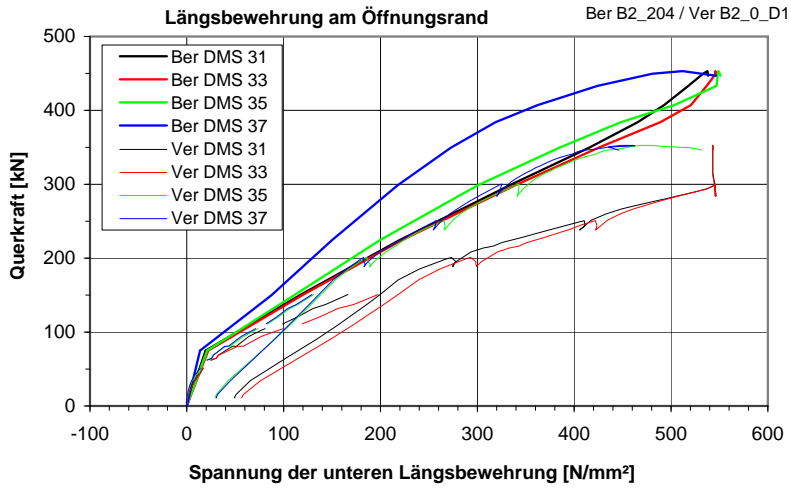


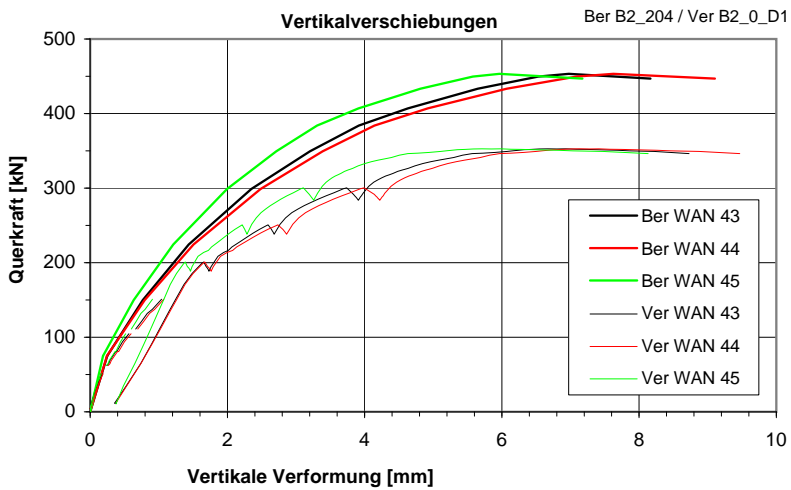
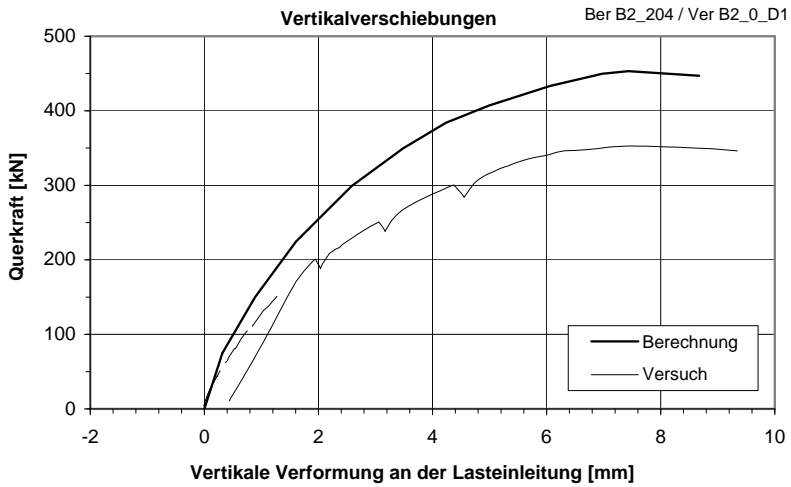
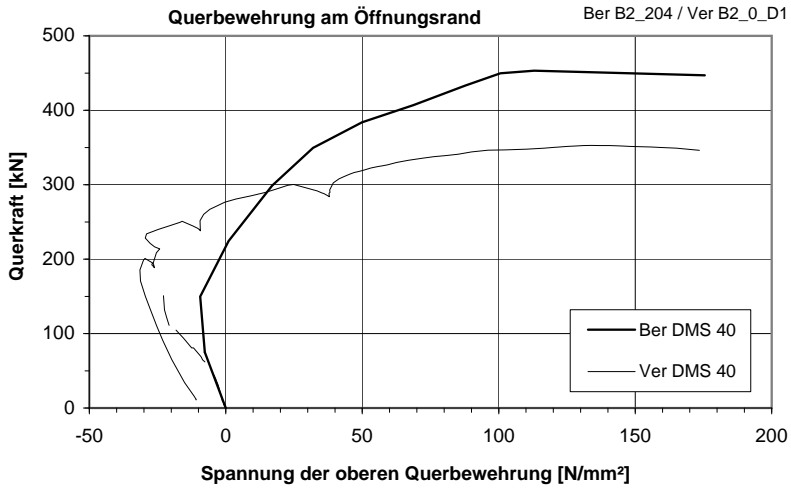


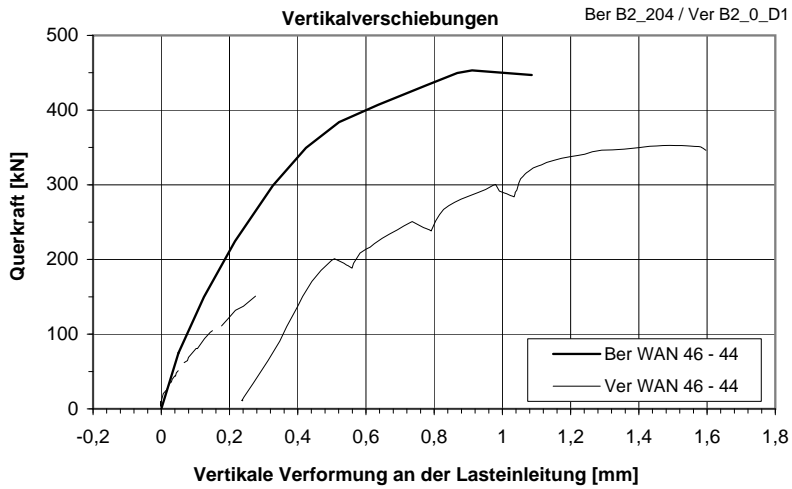


F.13. Versuch B2_0_D1

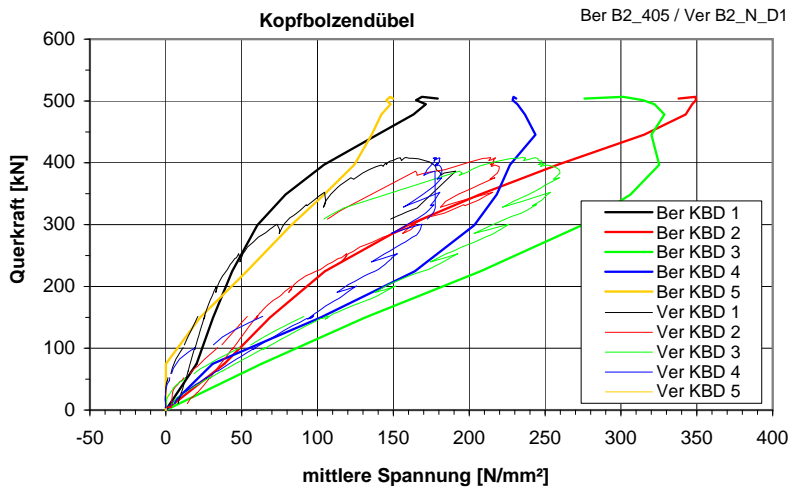


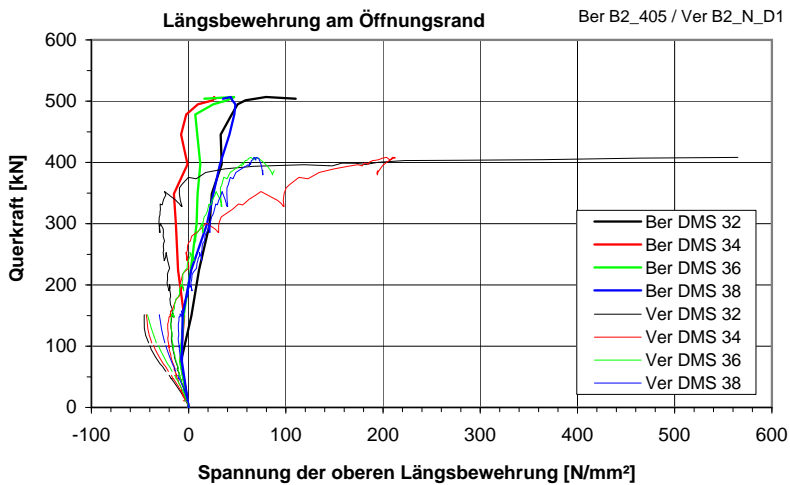
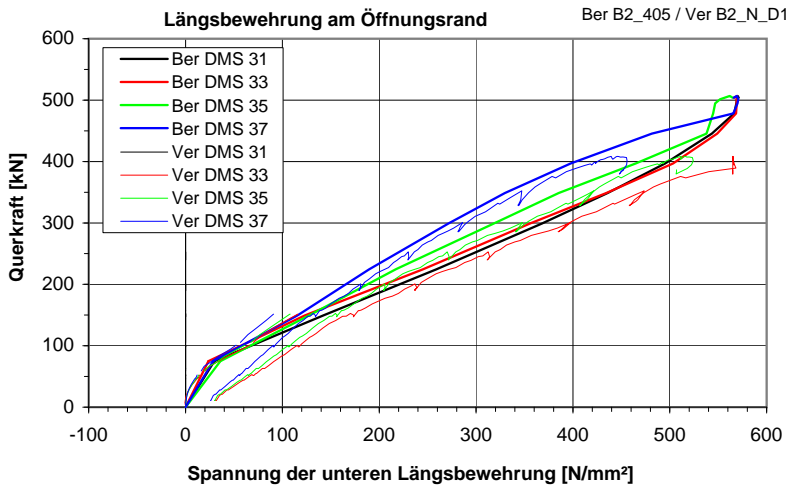
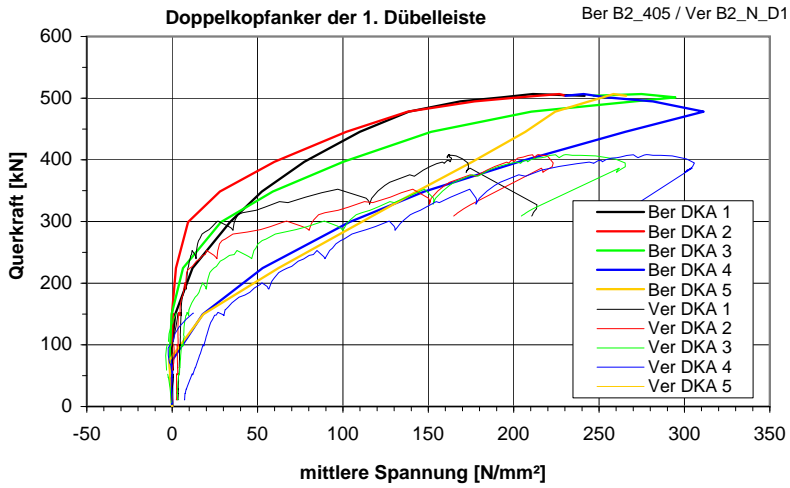


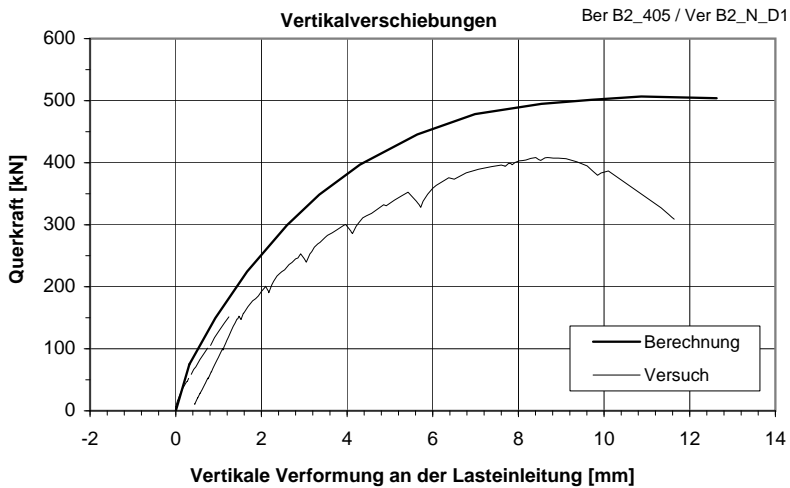
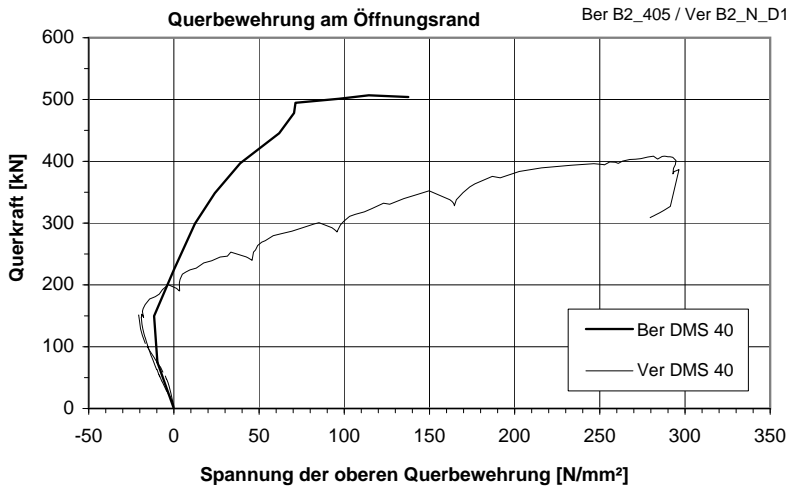
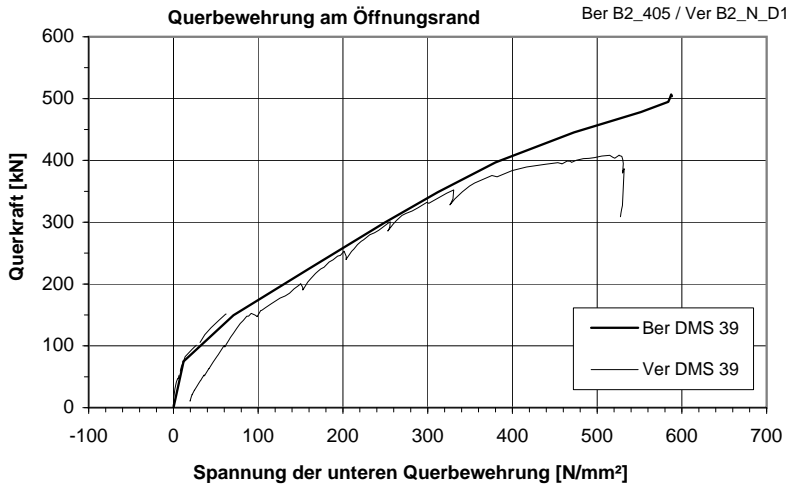


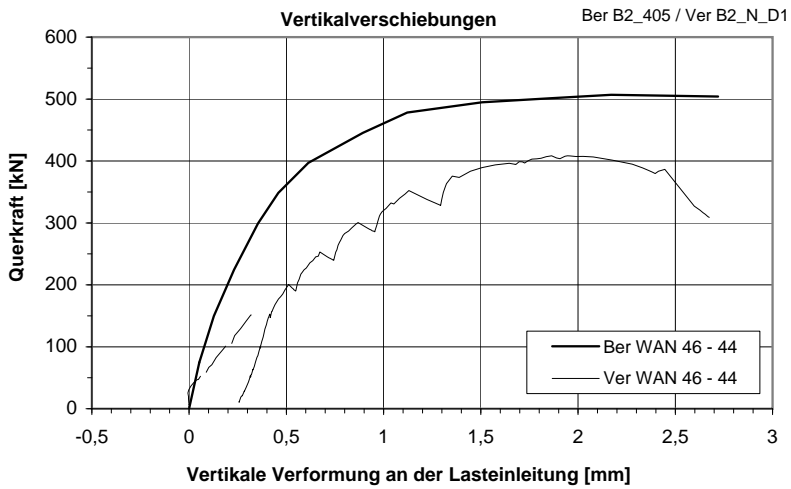
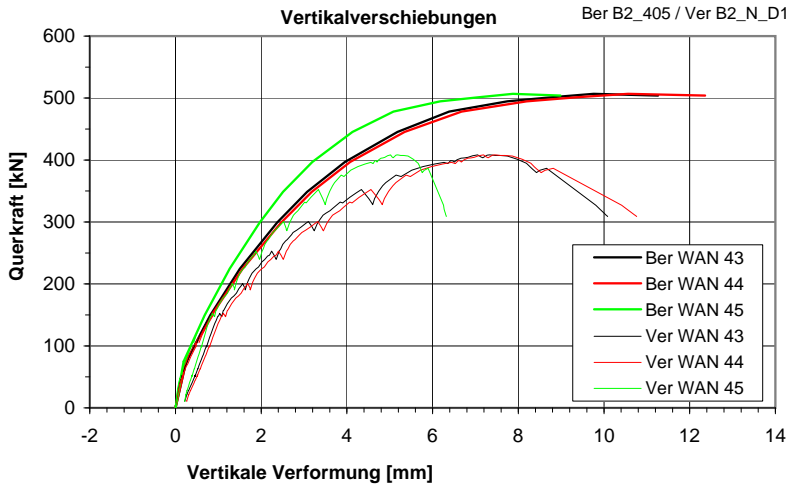


F.14. Versuch B2_N_D1

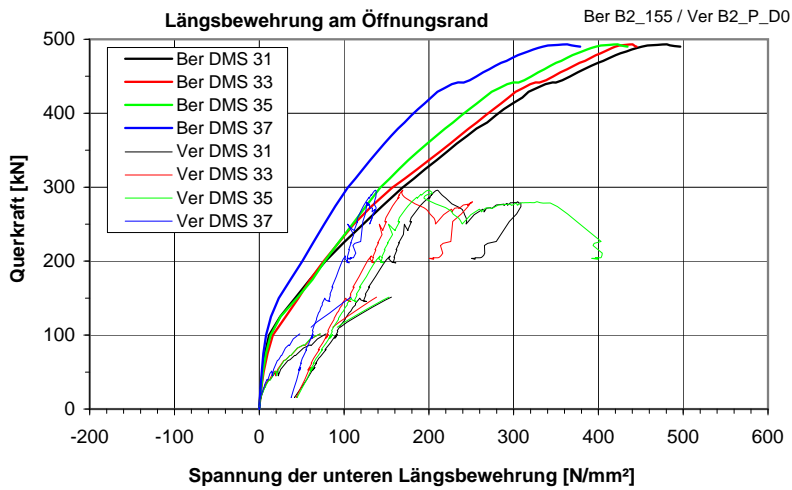
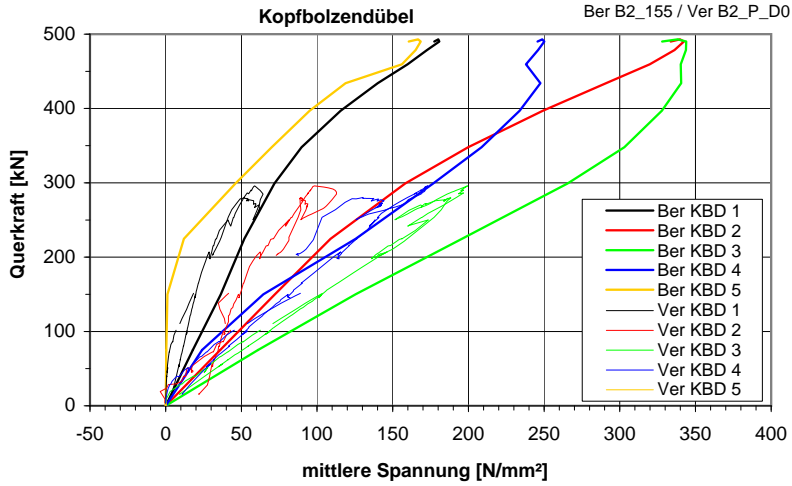


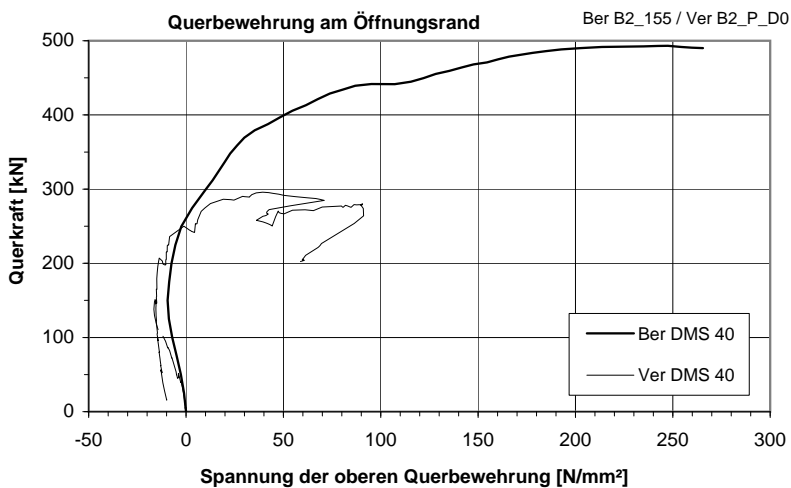
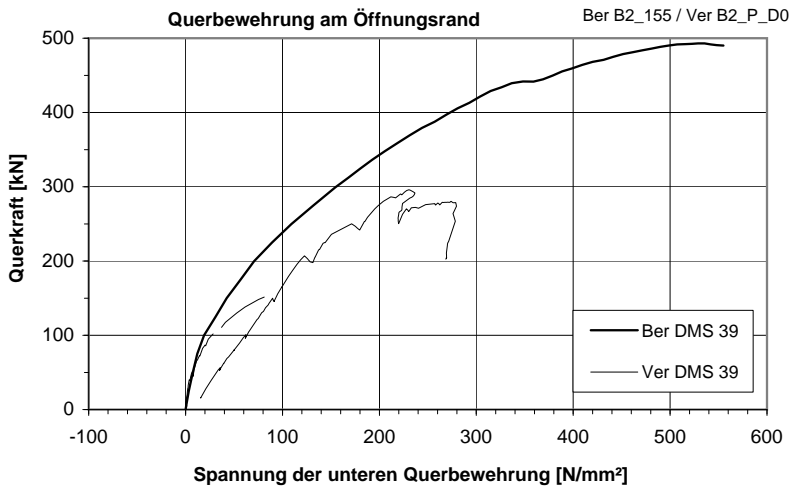
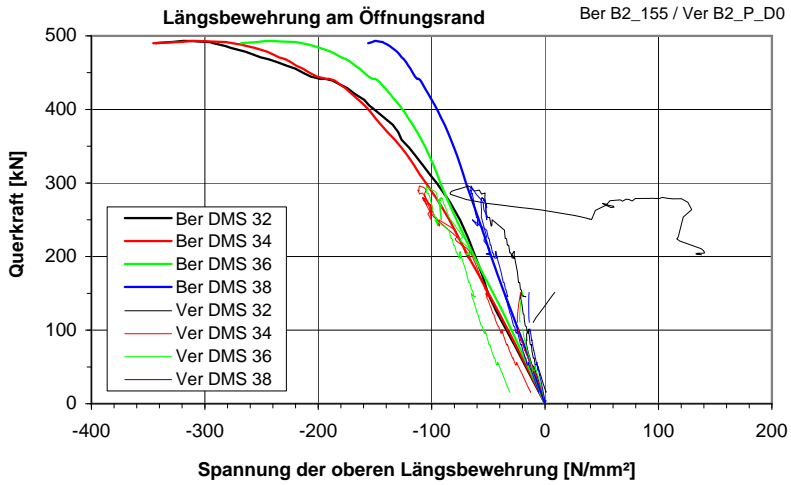


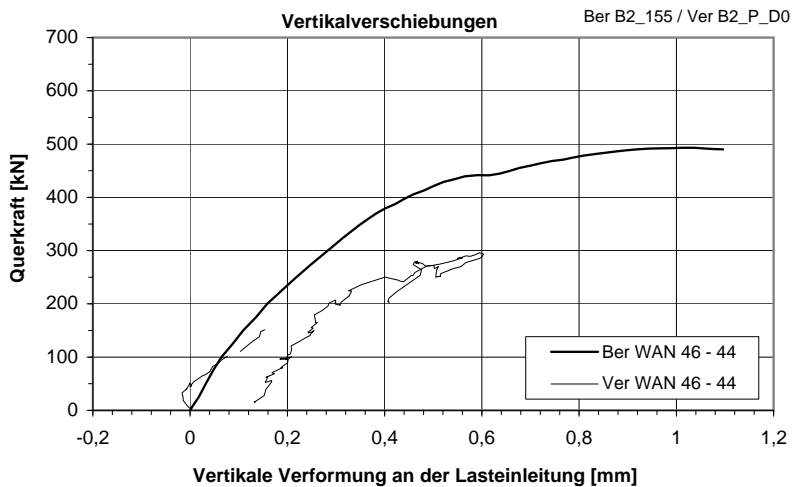
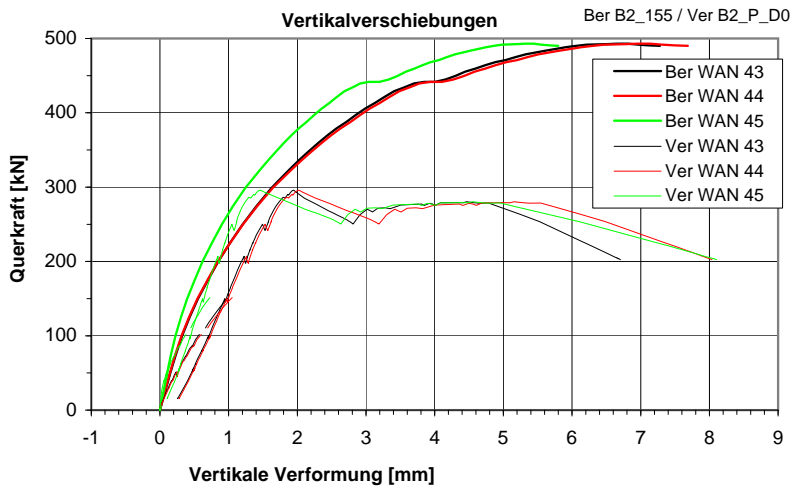
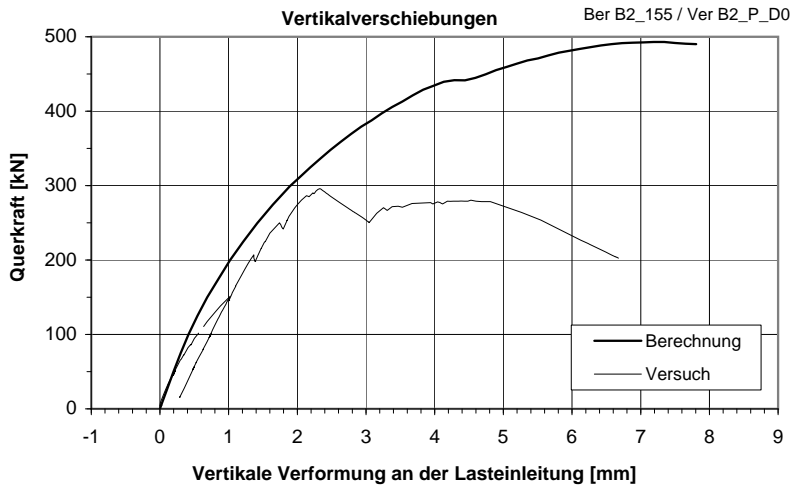




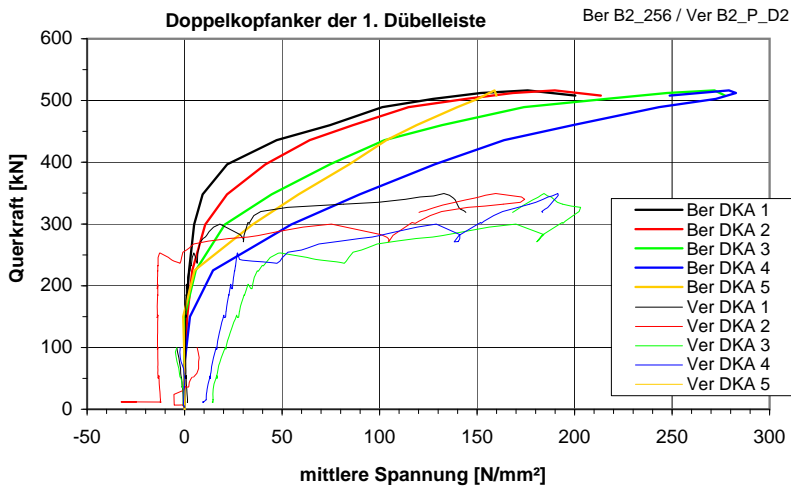
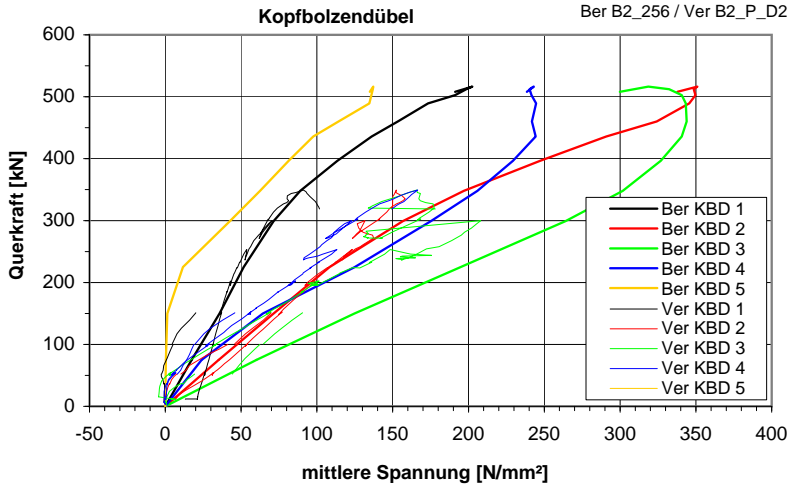
F.15. Versuch B2_P_D0

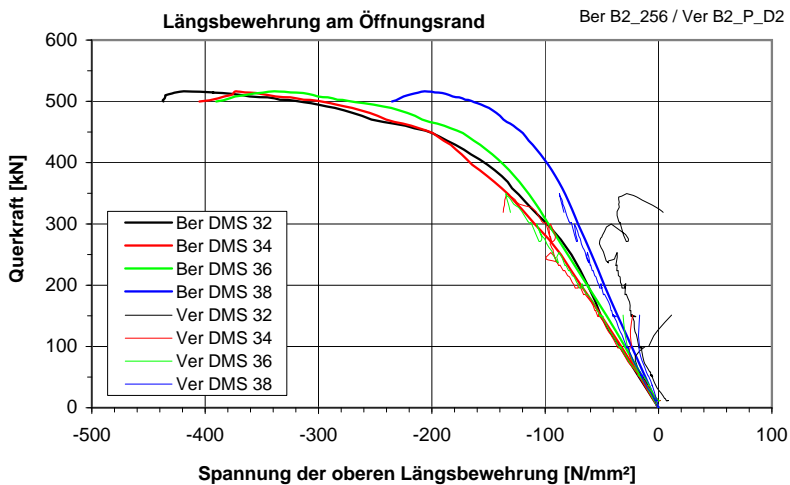
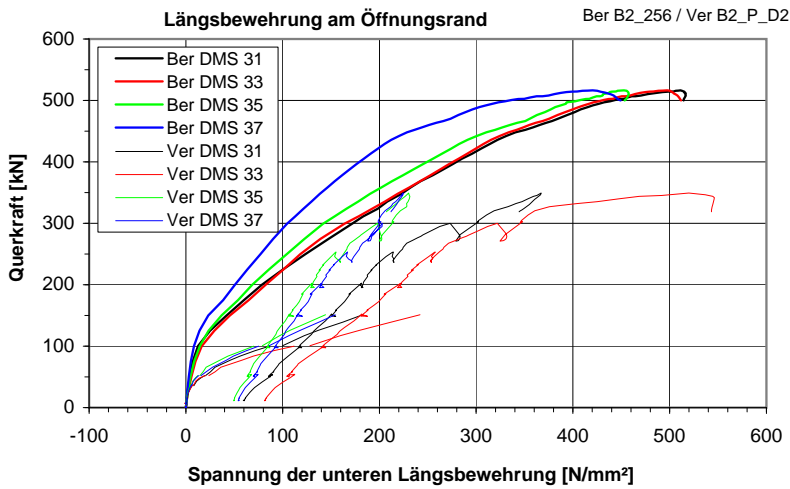
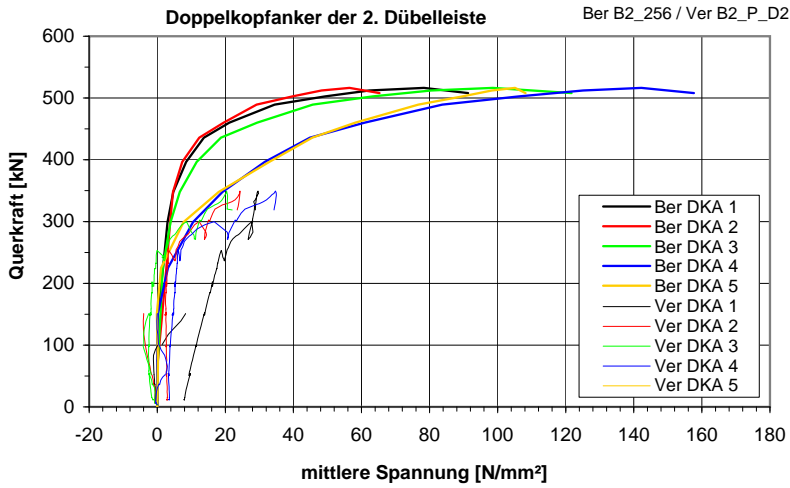


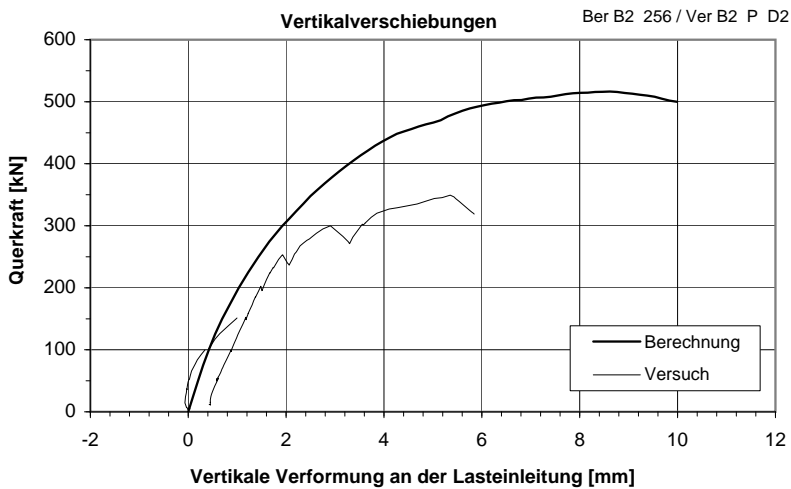
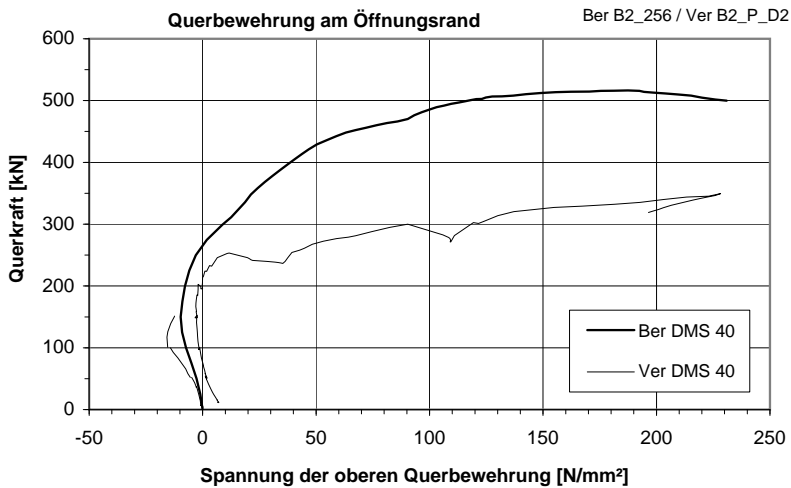
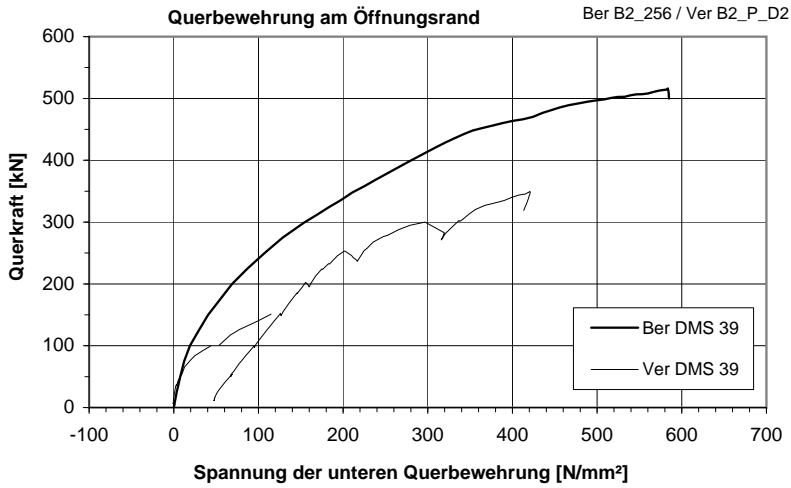


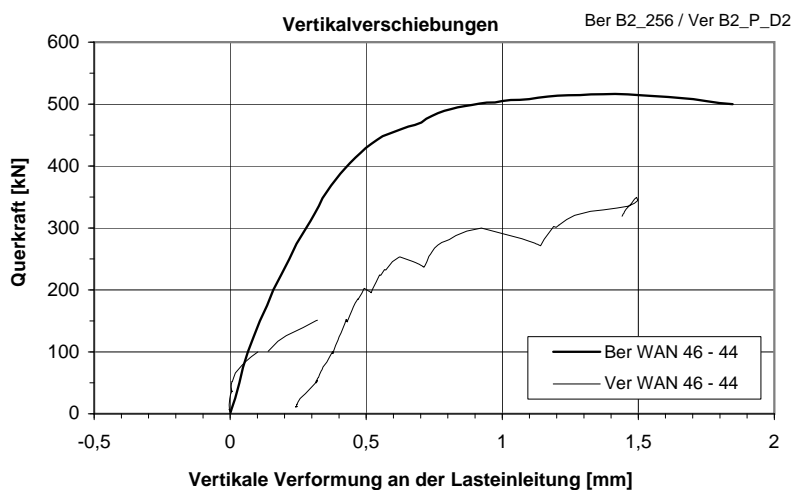
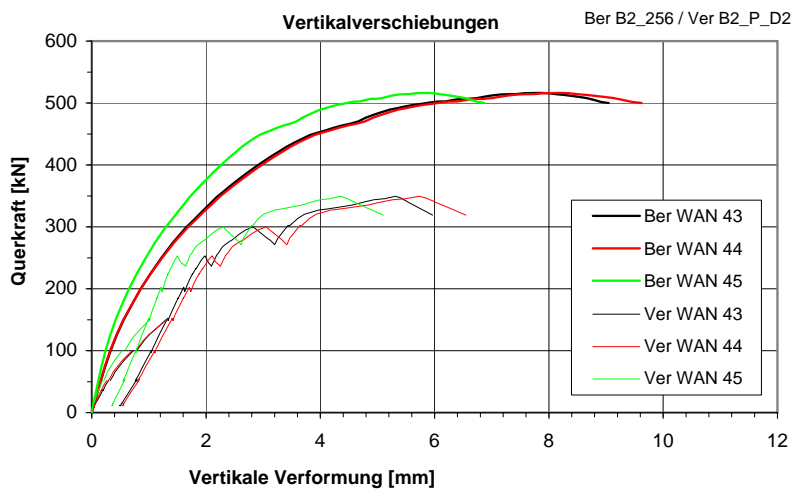


F.16. Versuch B2_P_D2

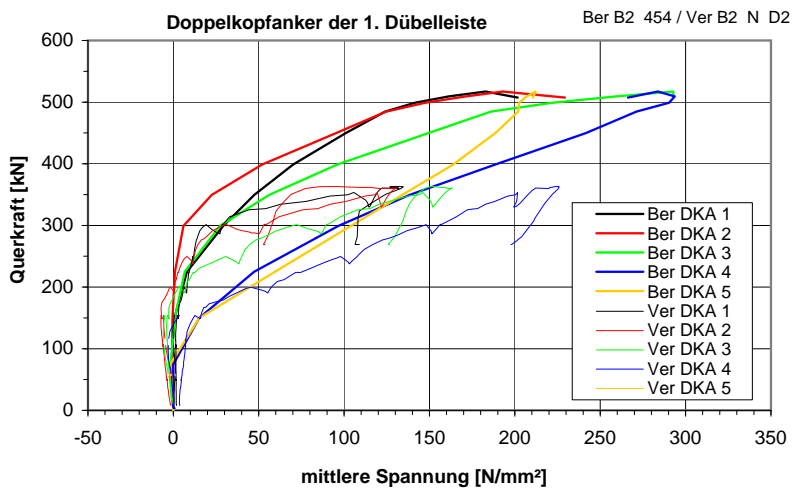
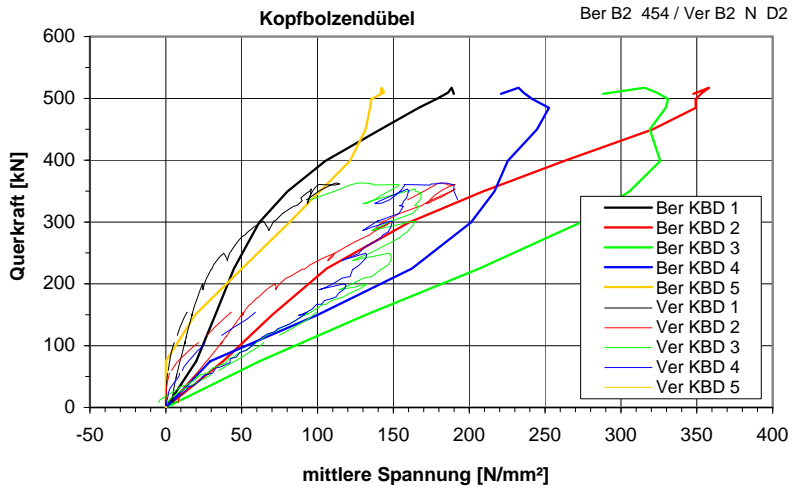


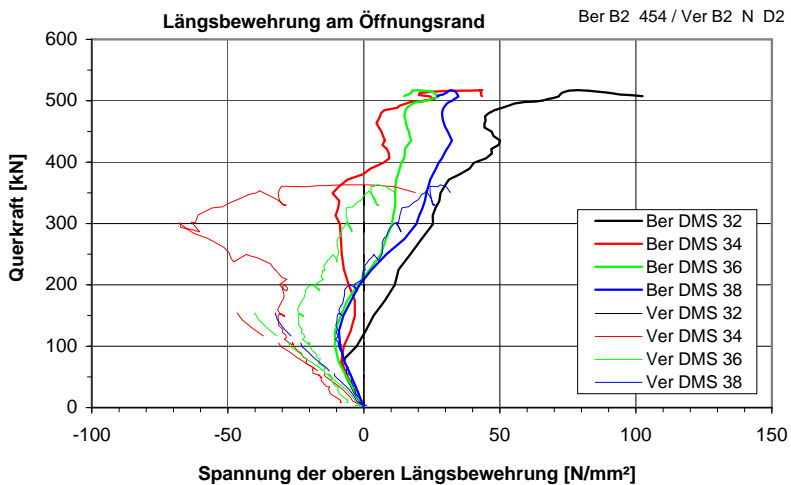
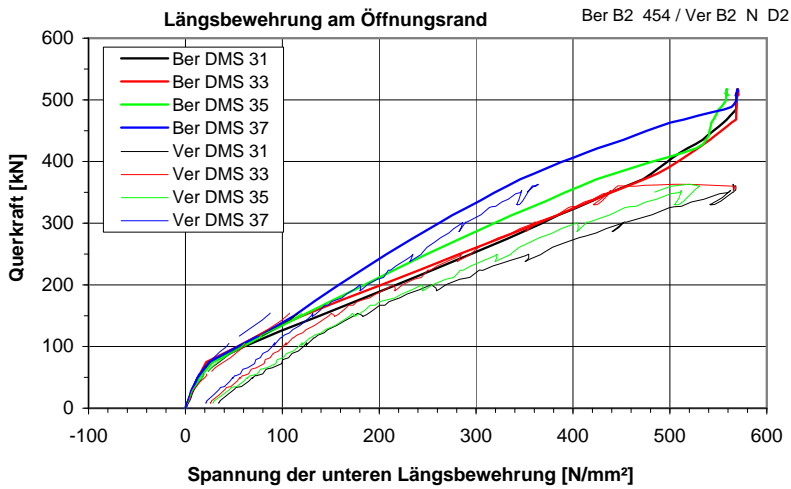
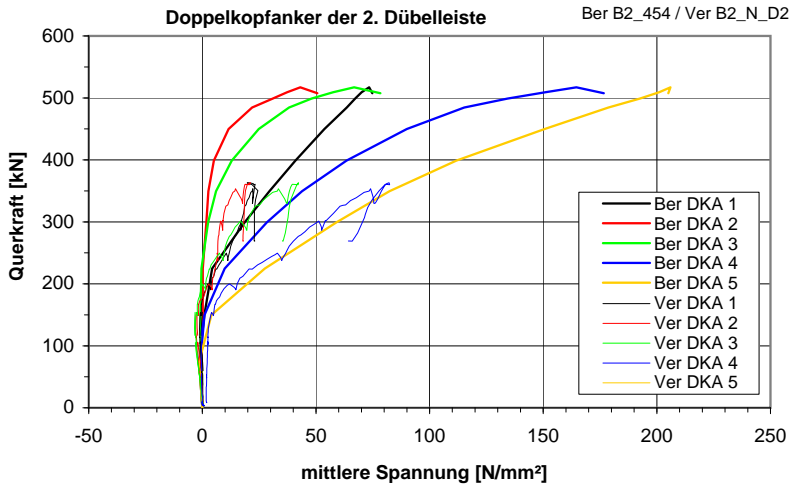


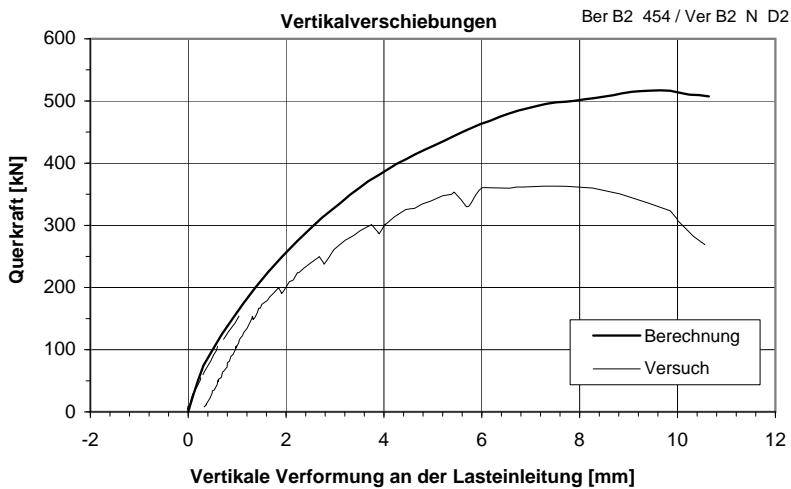
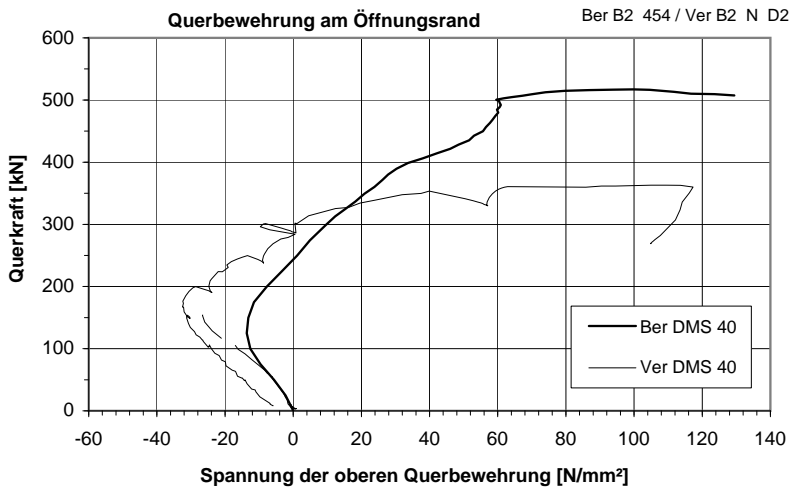
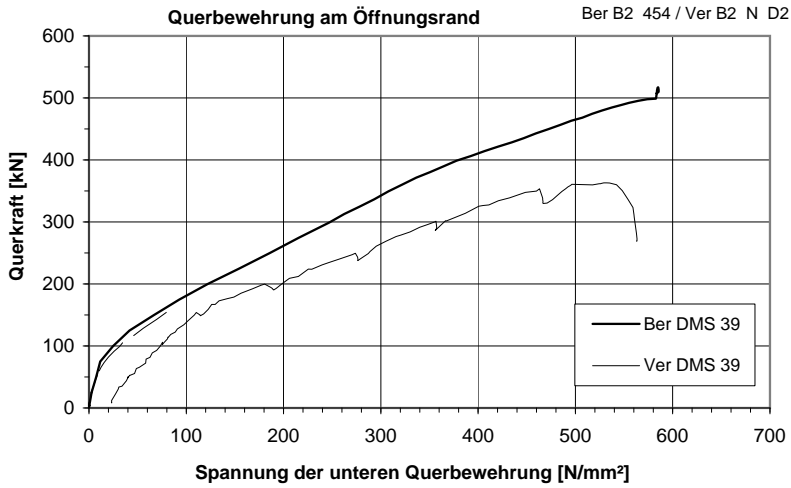


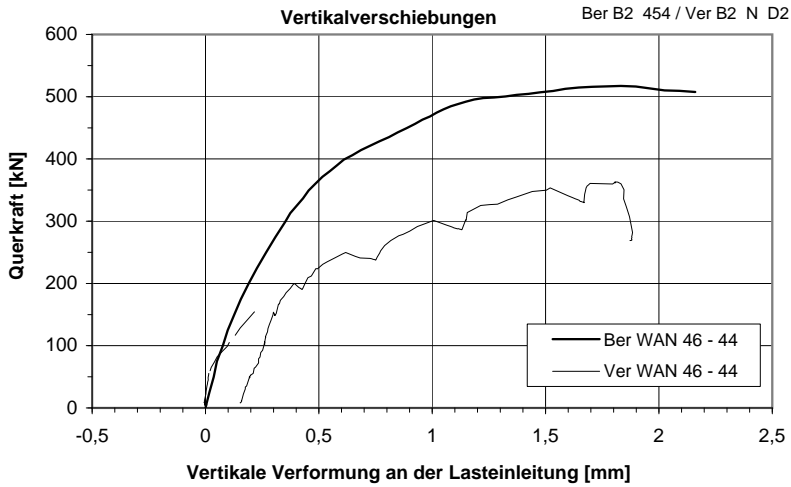
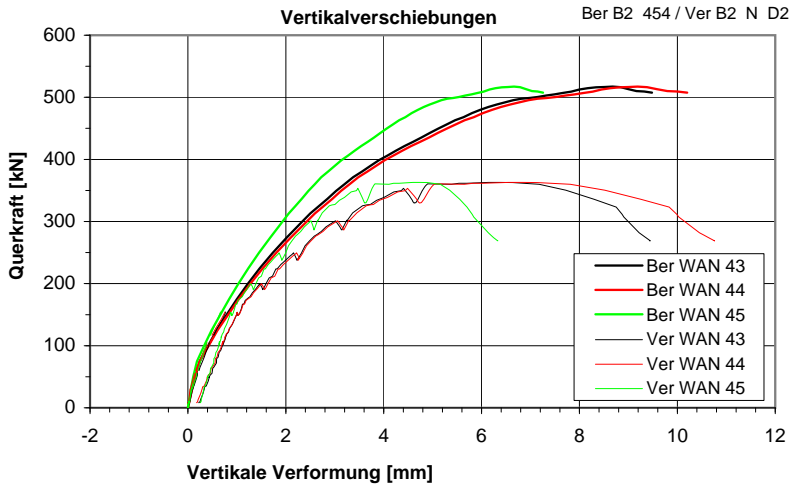


F.17. Versuch B2_N_D2

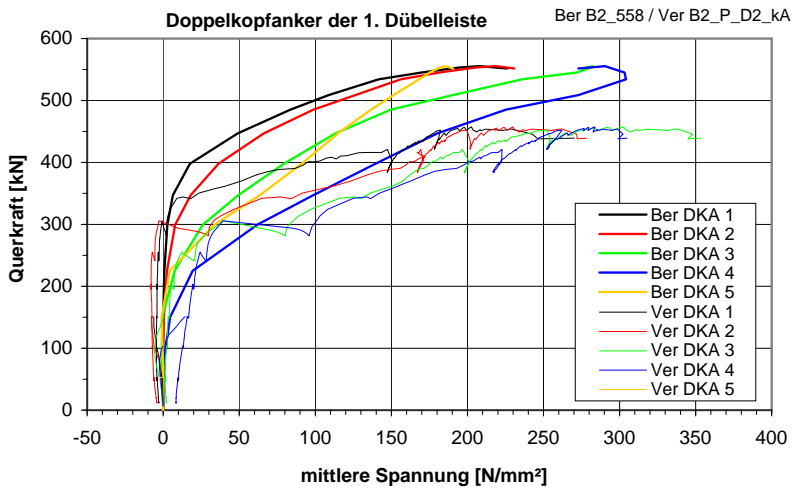
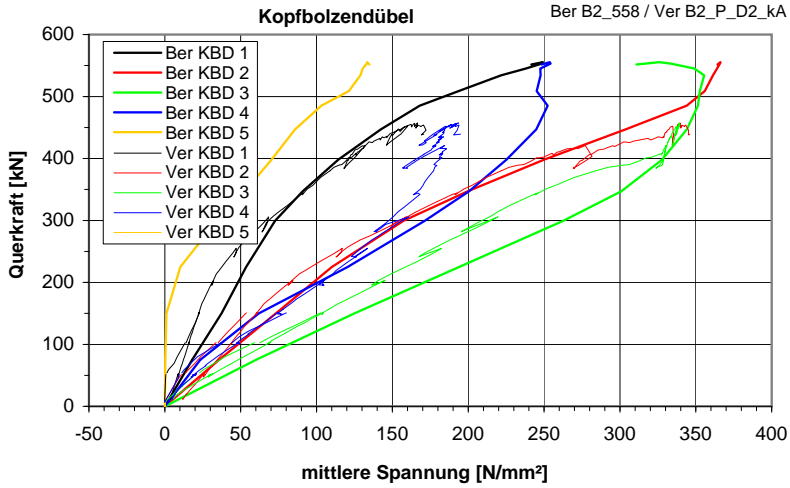


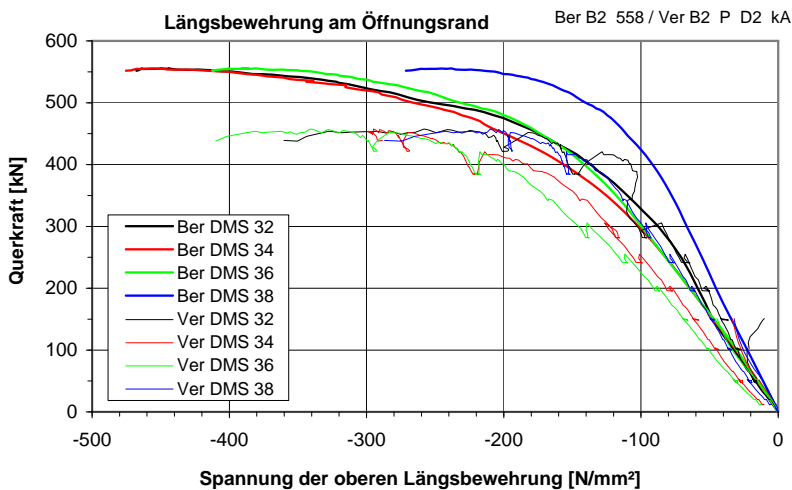
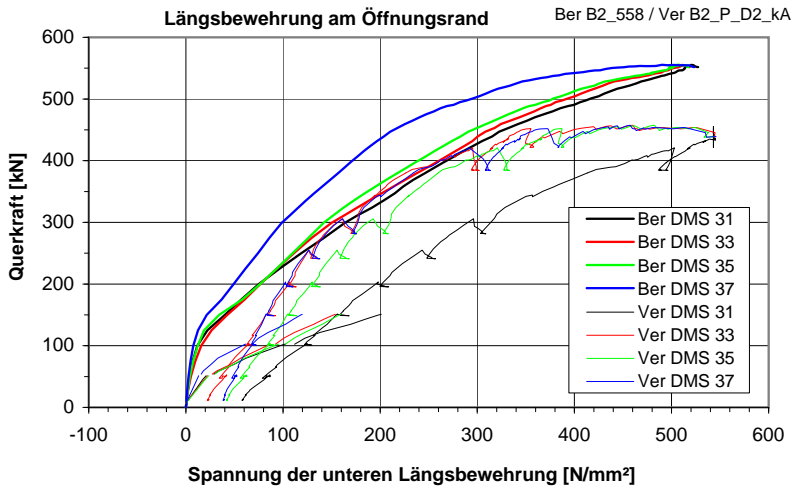
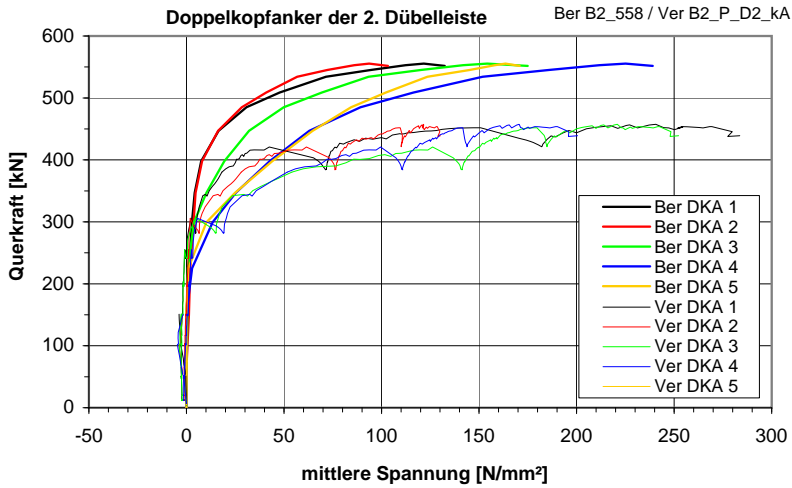


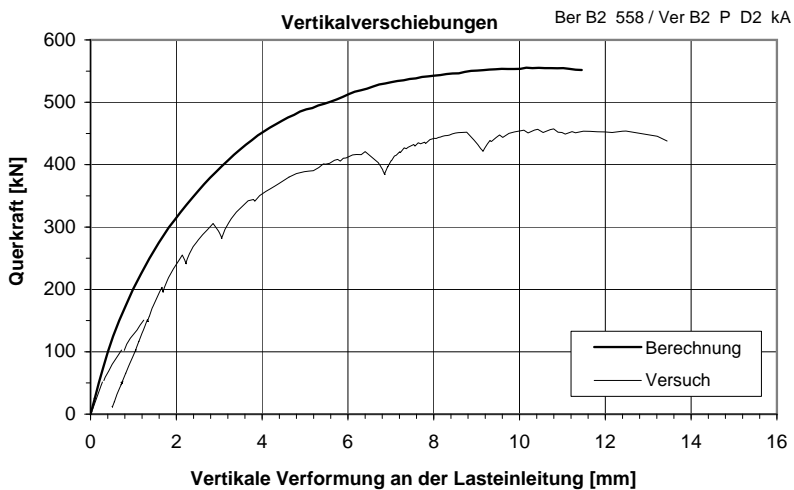
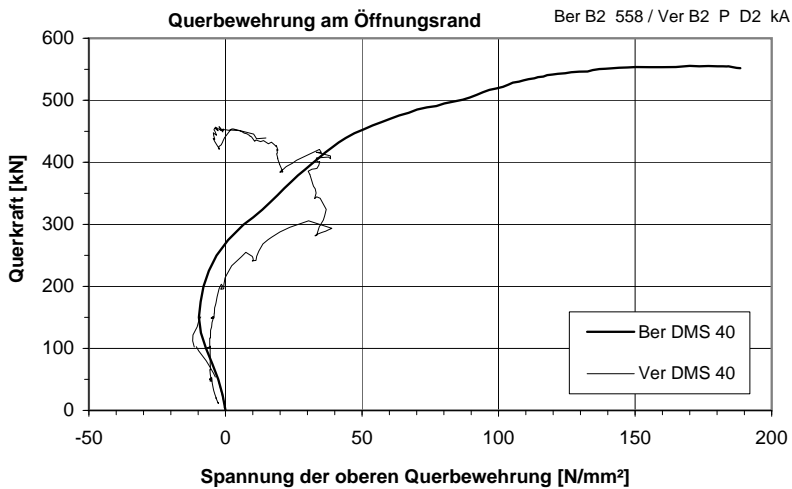
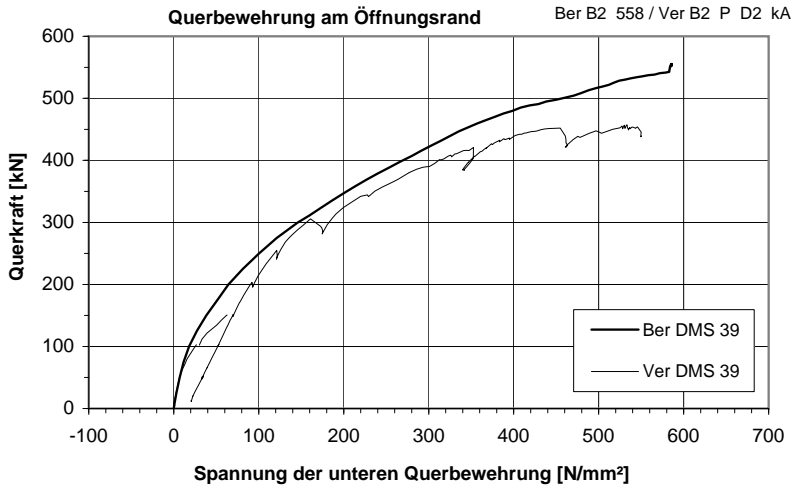


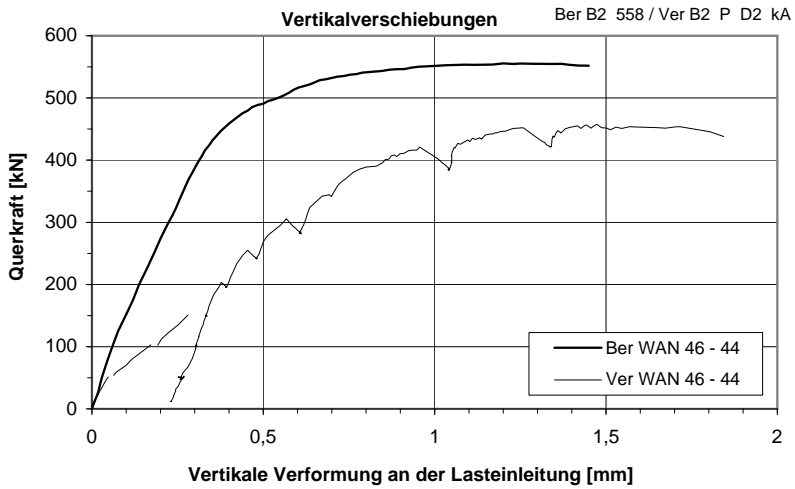
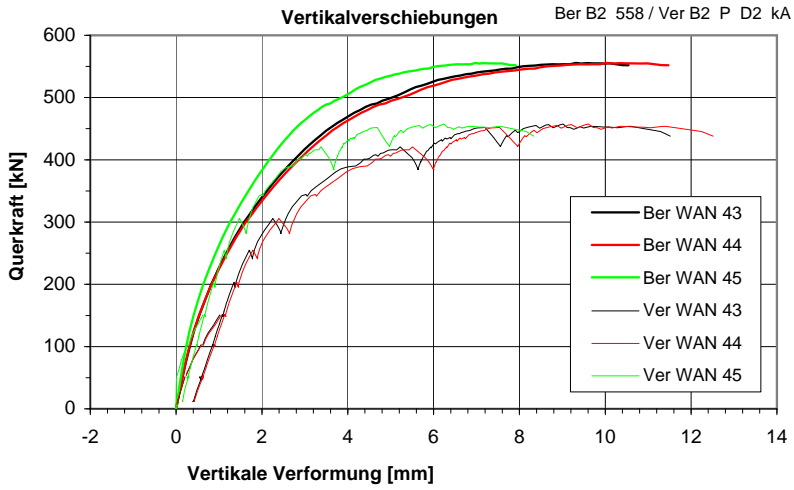


F.18. Versuch B2_P_D2_kA

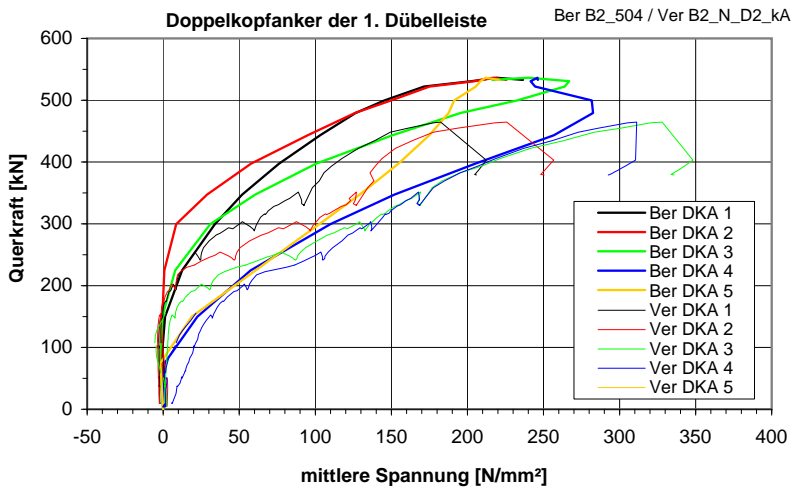
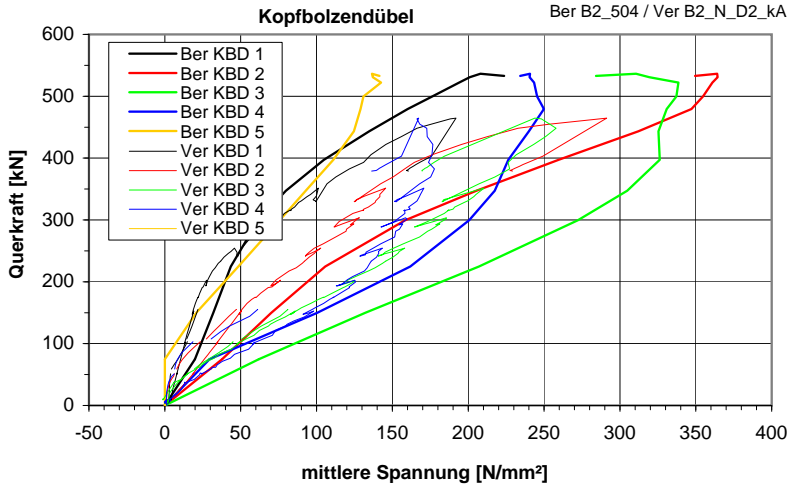


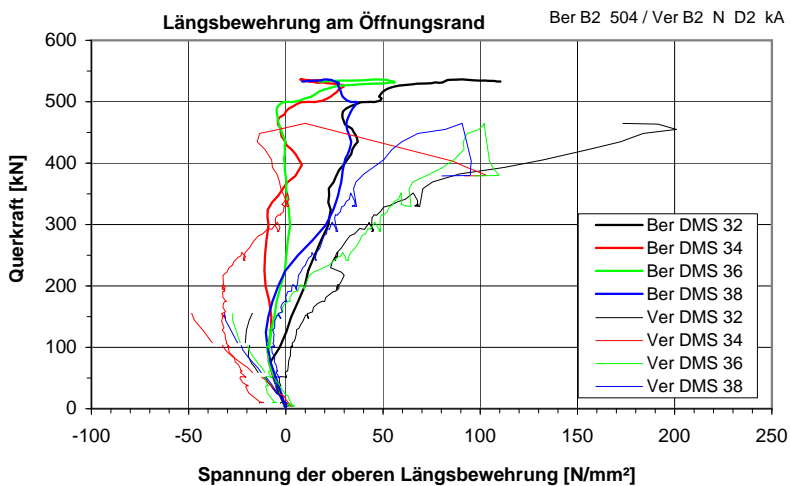
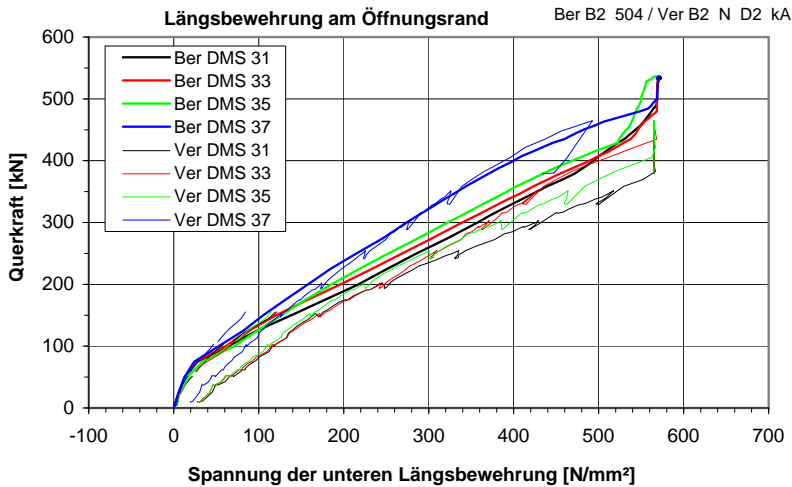
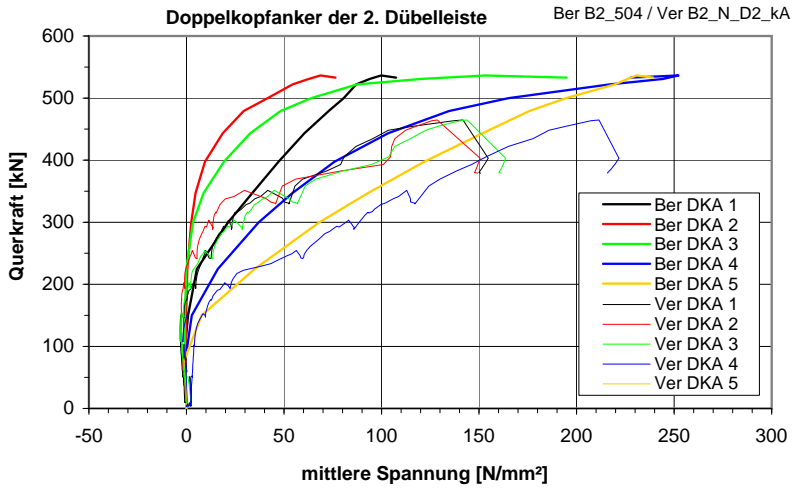


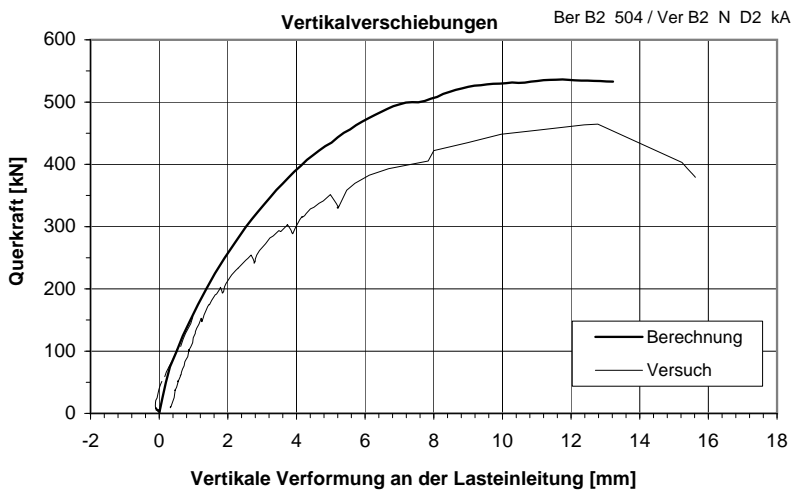
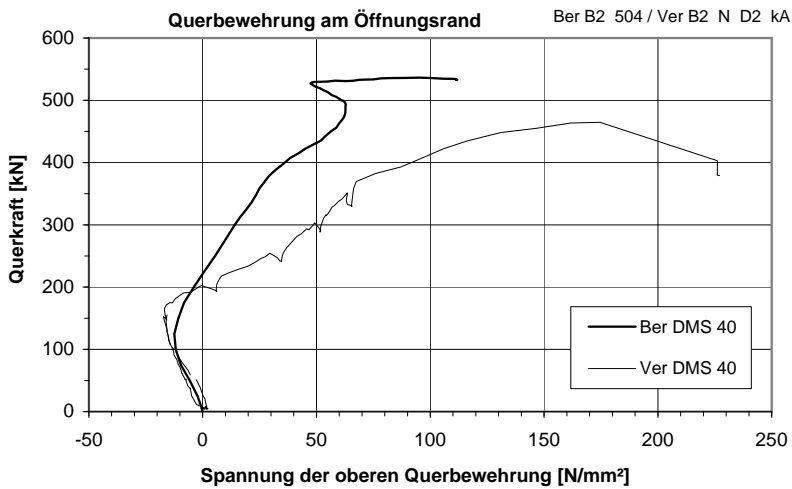
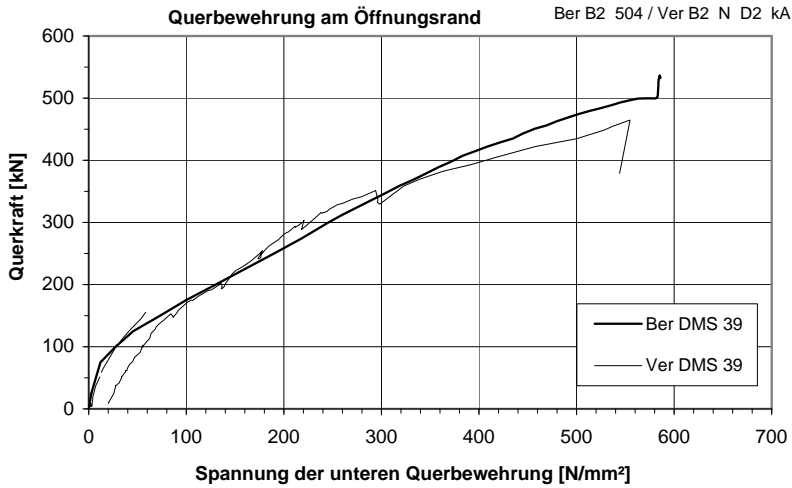


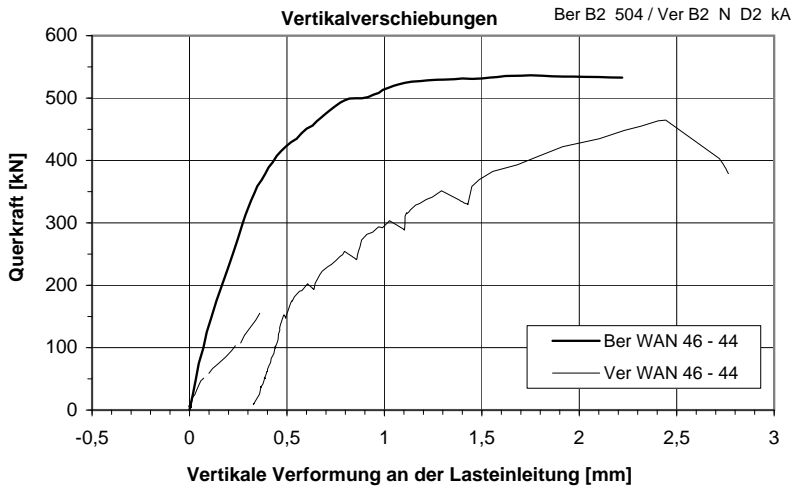
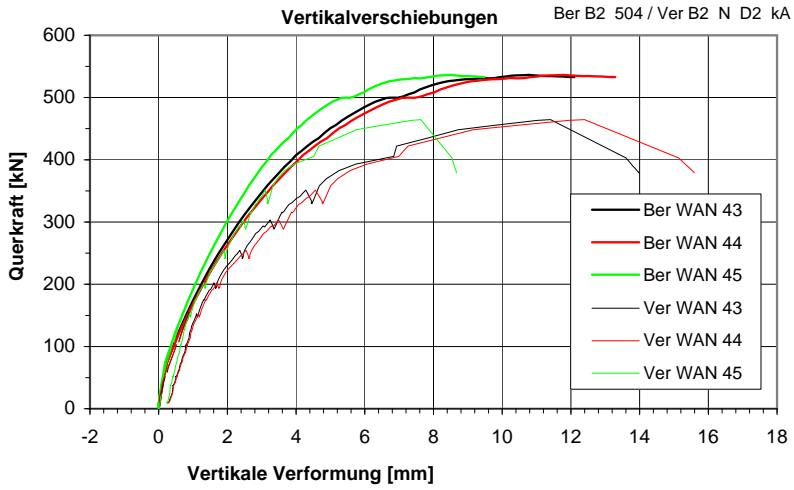


F.19. Versuch B2_N_D2_kA

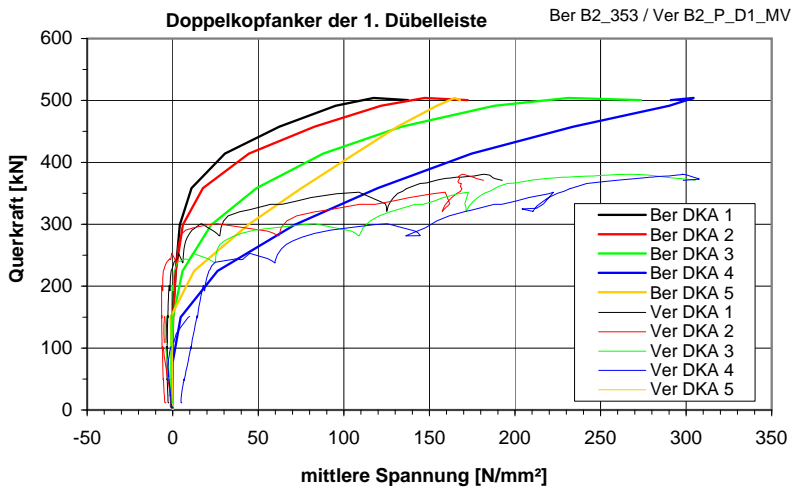
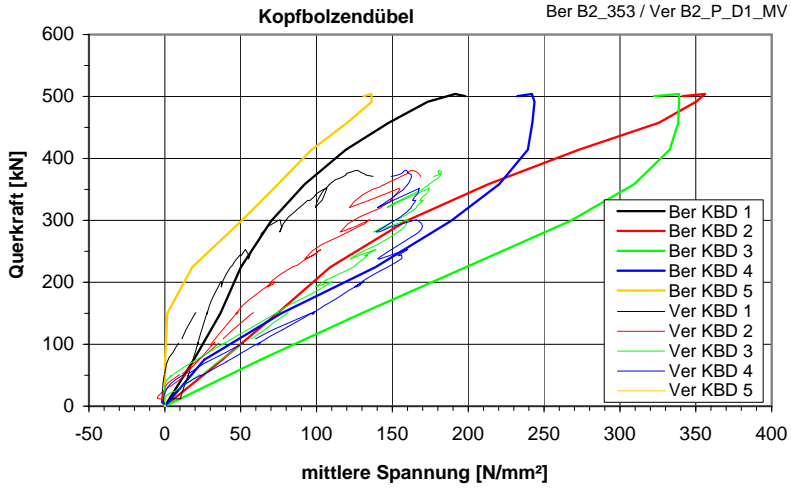


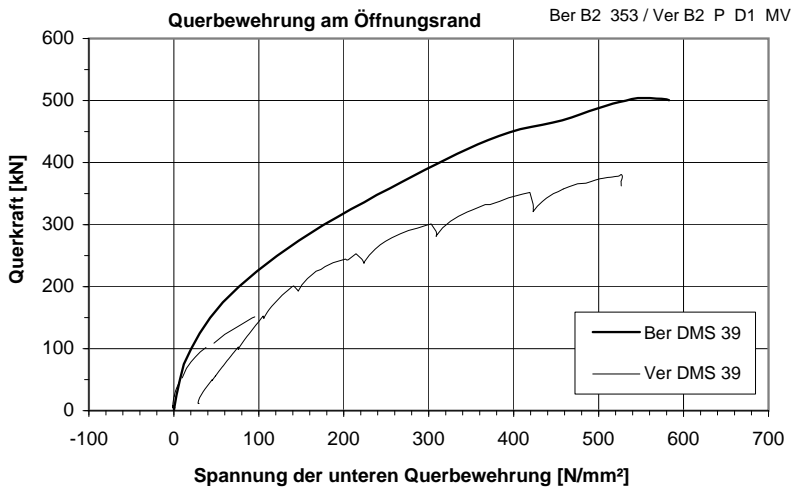
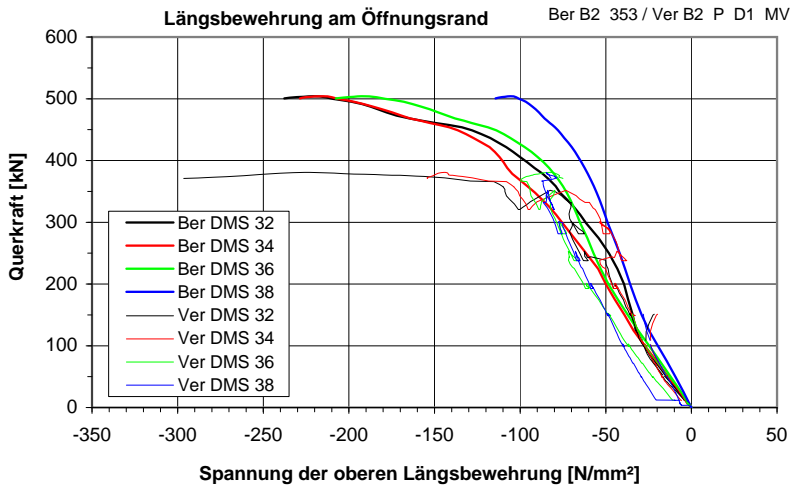
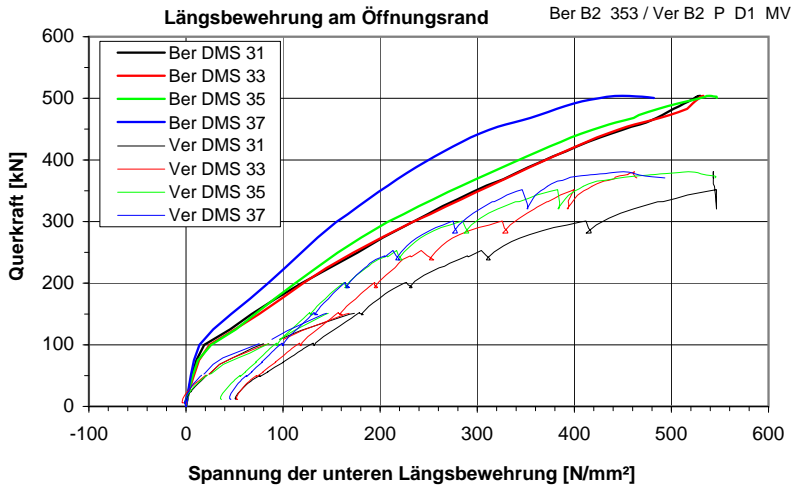


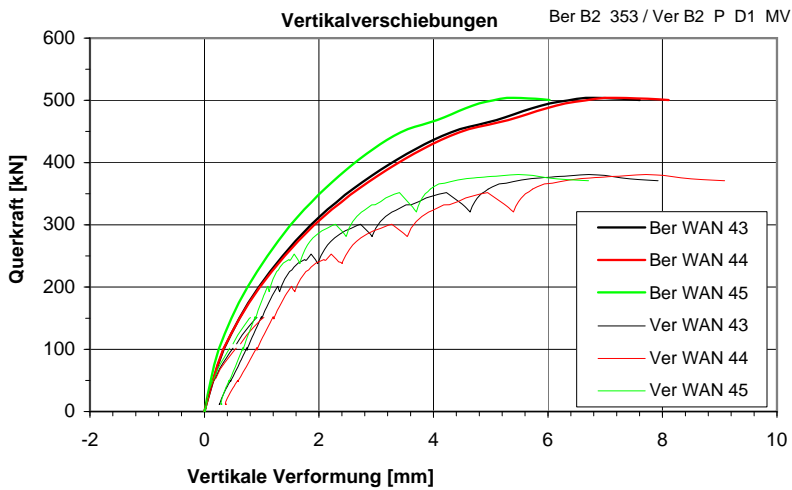
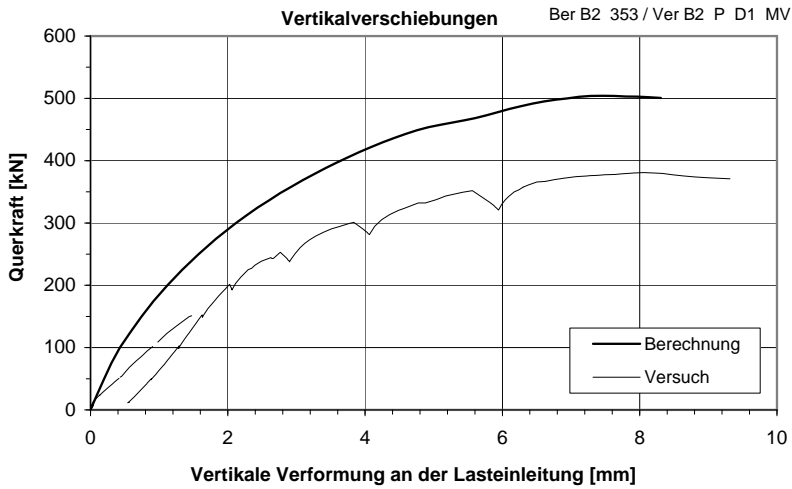
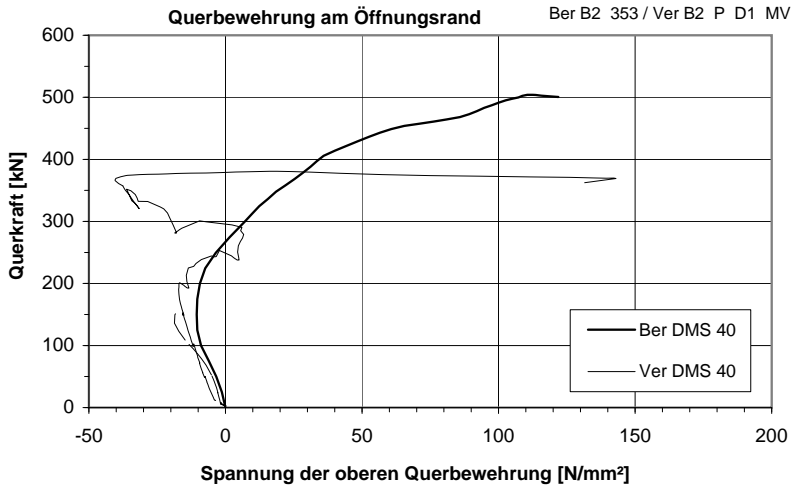


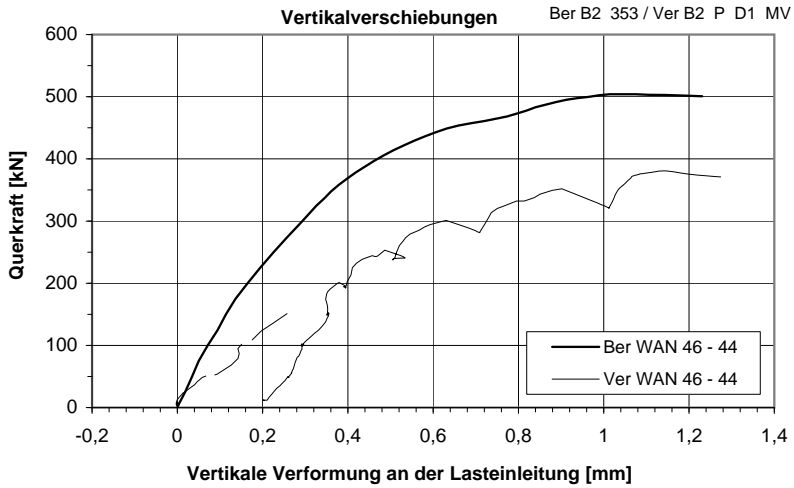


F.20. Versuch B2_P_D1_MV

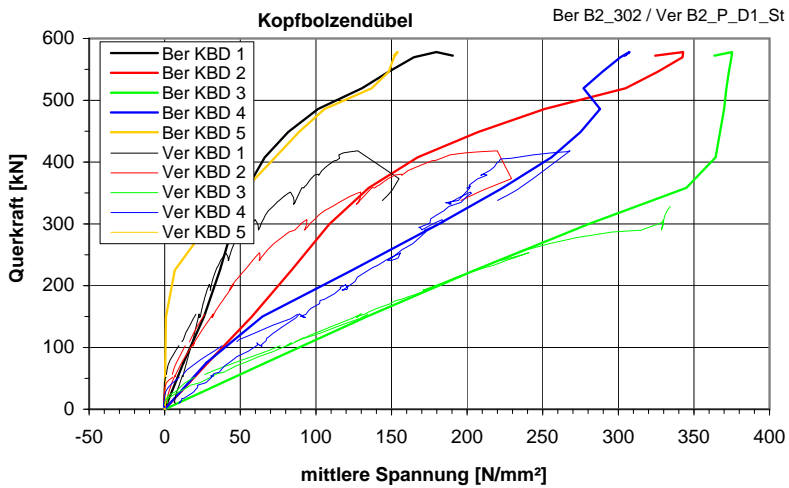


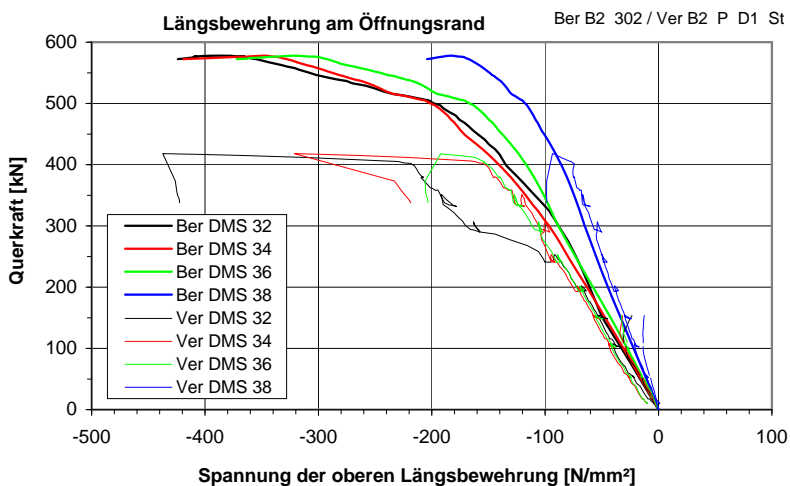
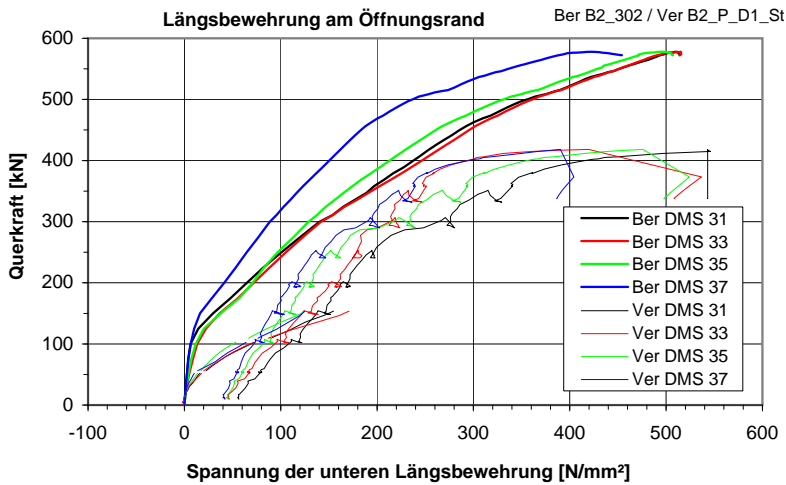
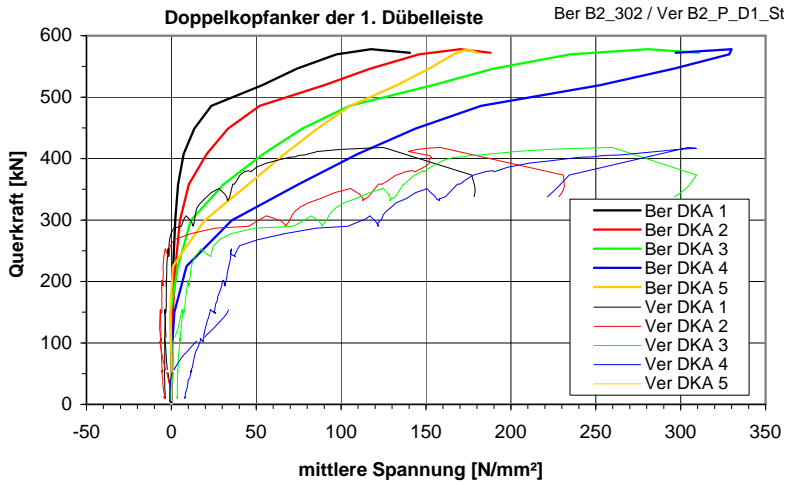


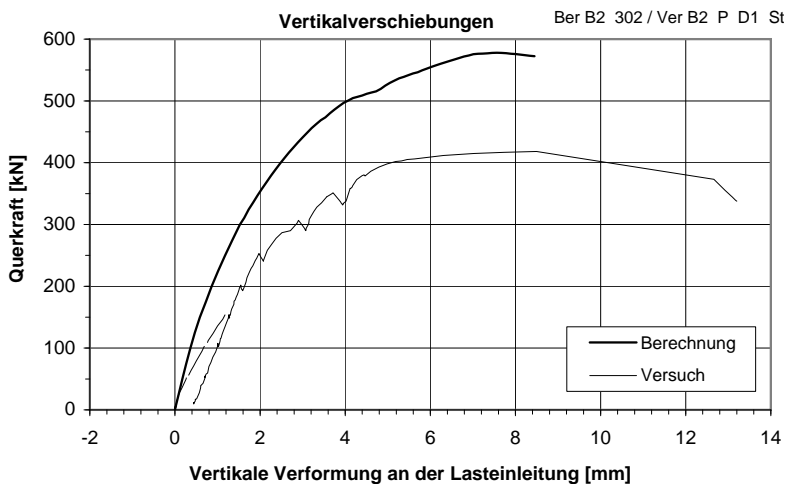
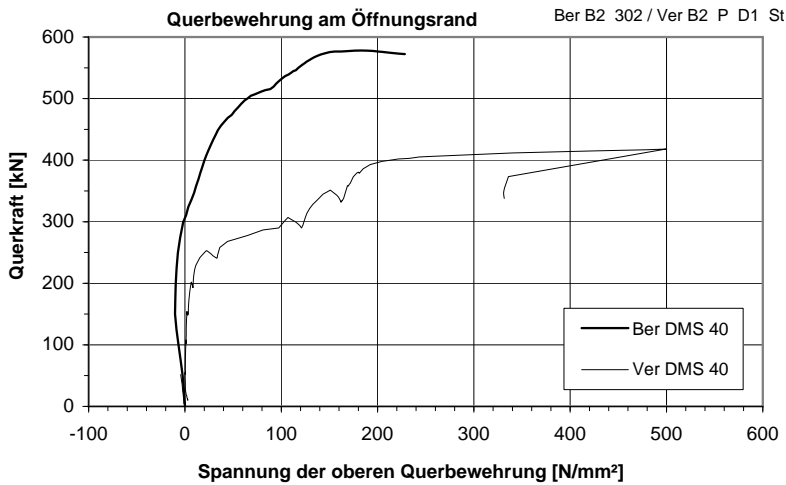
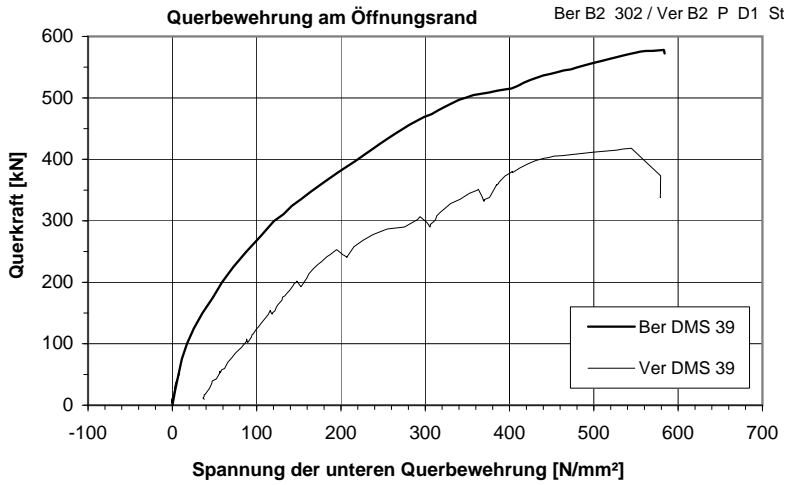


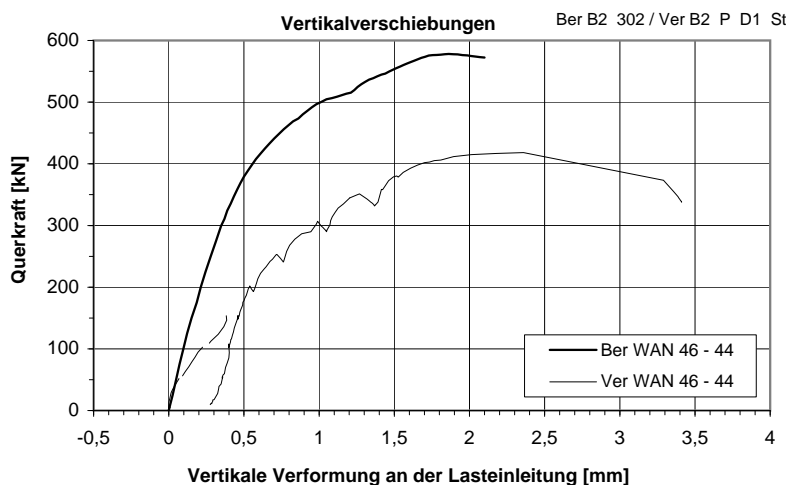
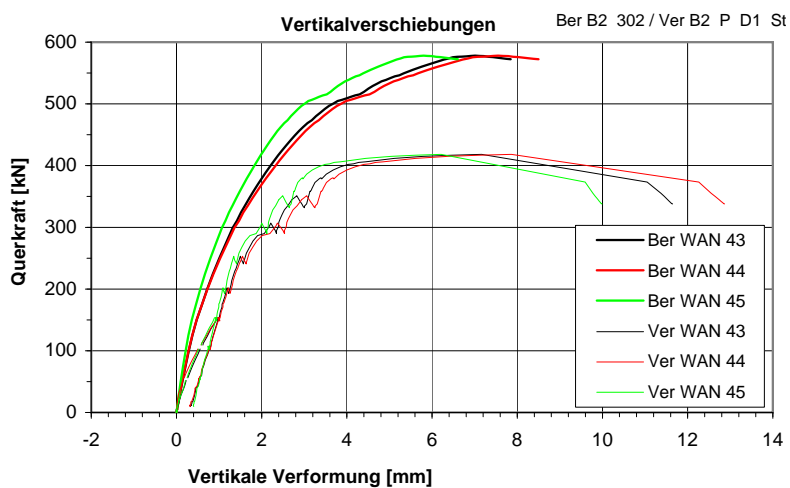


F.21. Versuch B2_P_D1_St

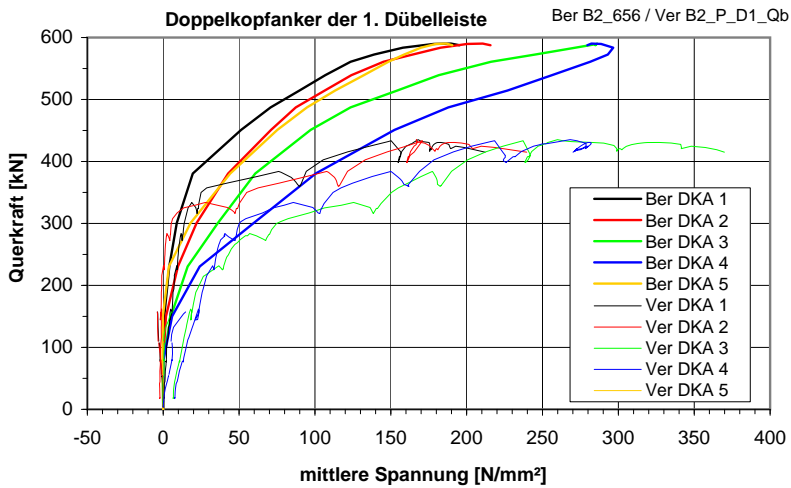
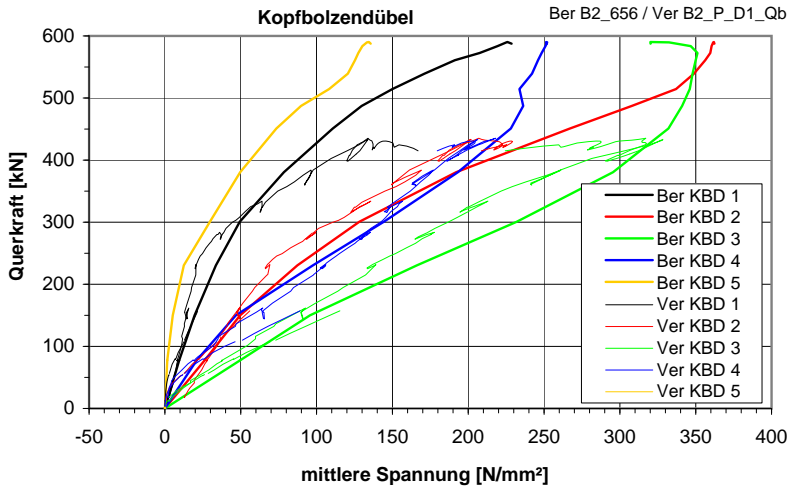


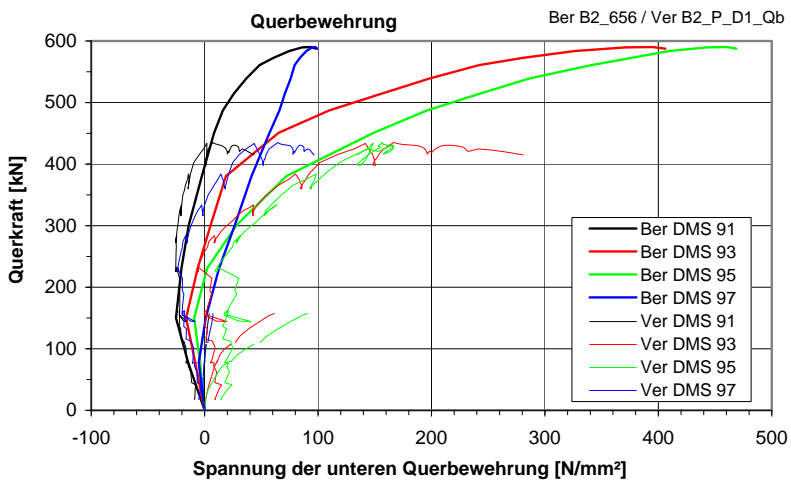
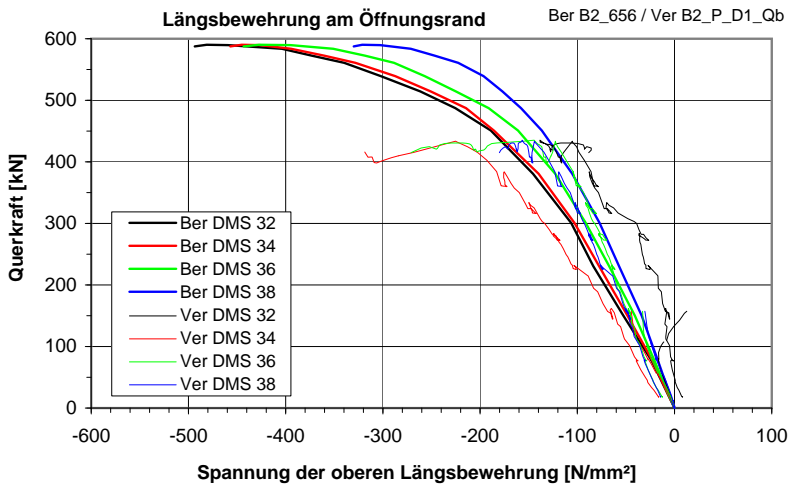
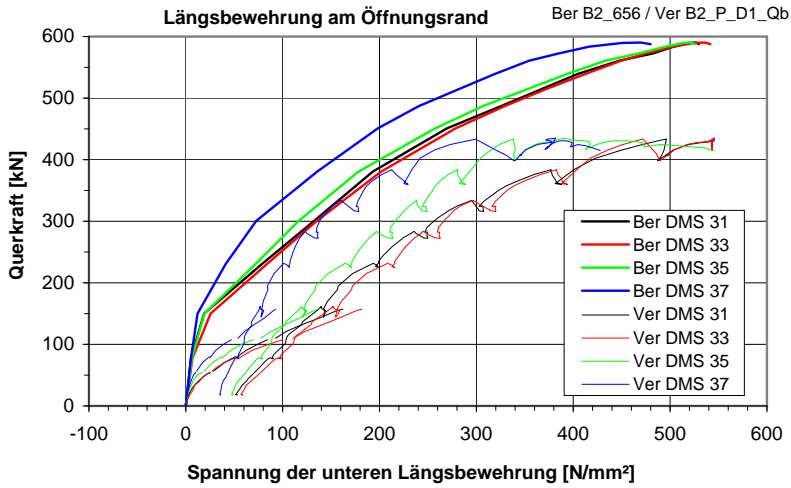


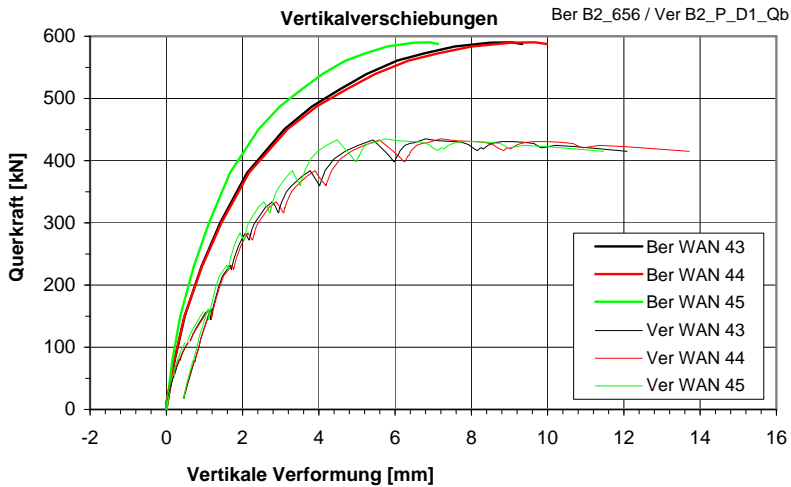
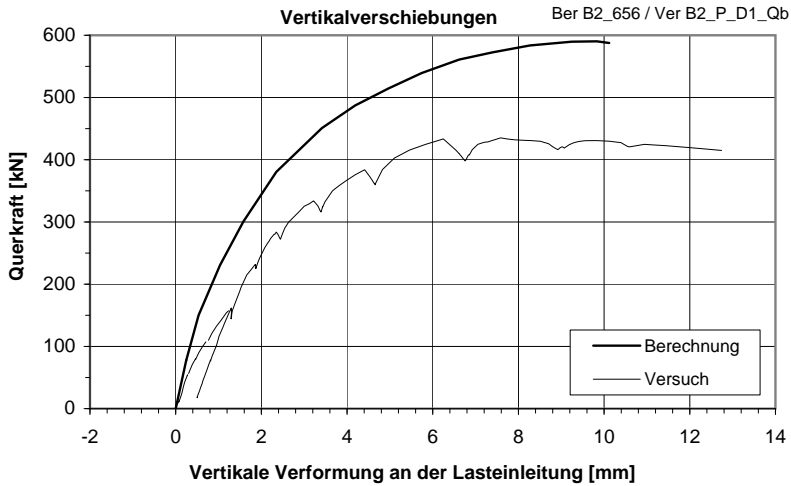
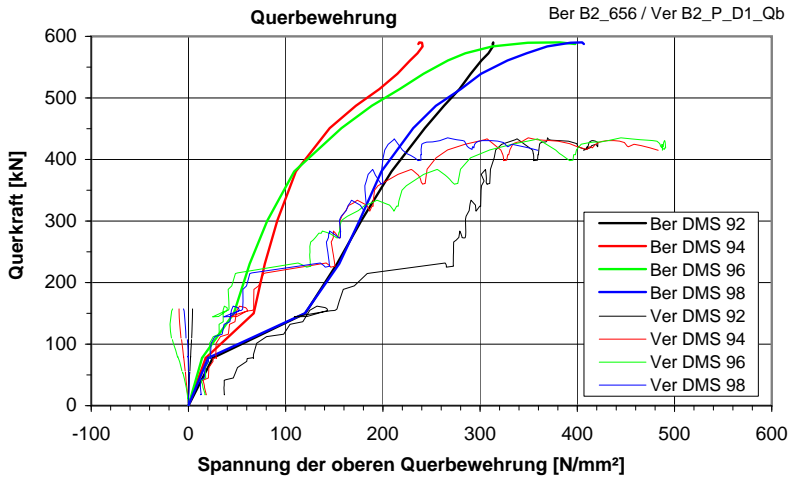


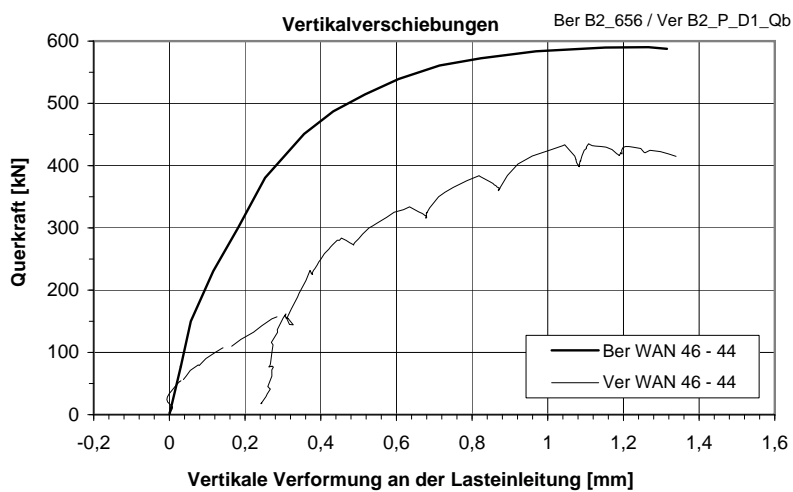


F.22. Versuch B2_P_D1_Qb



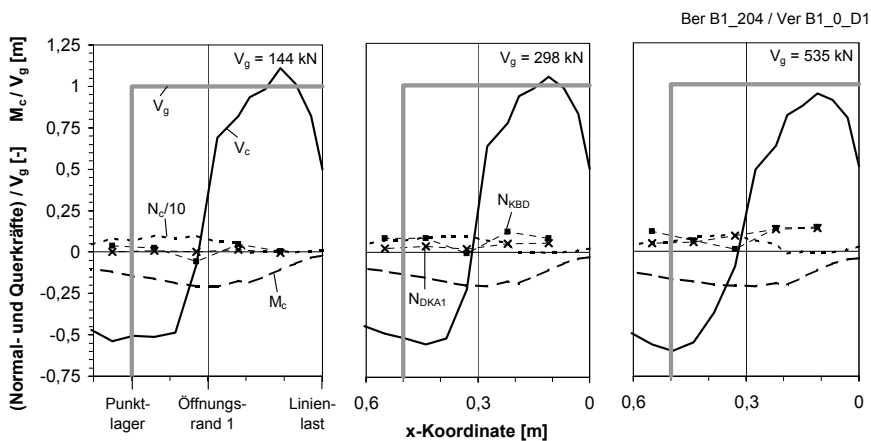
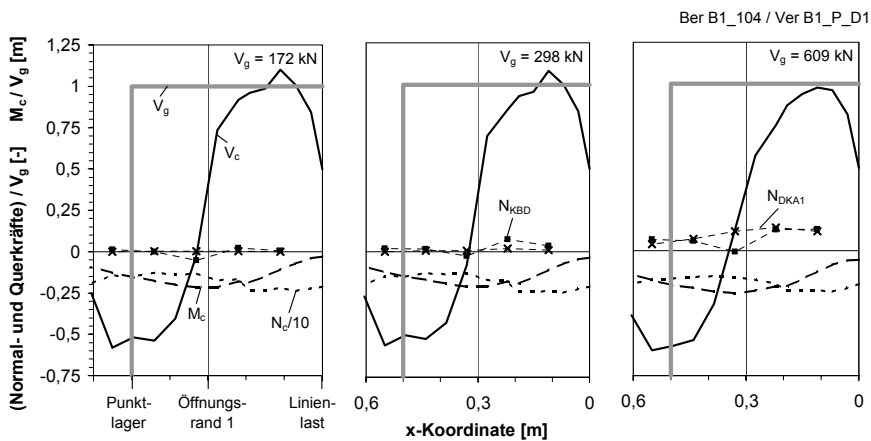


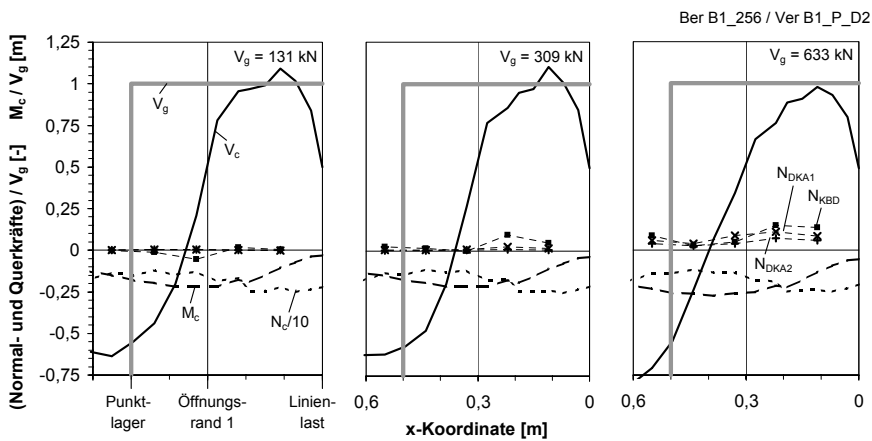
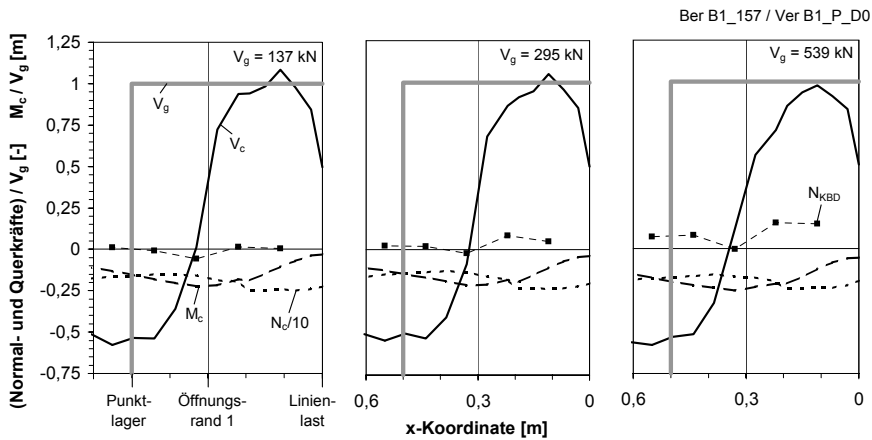
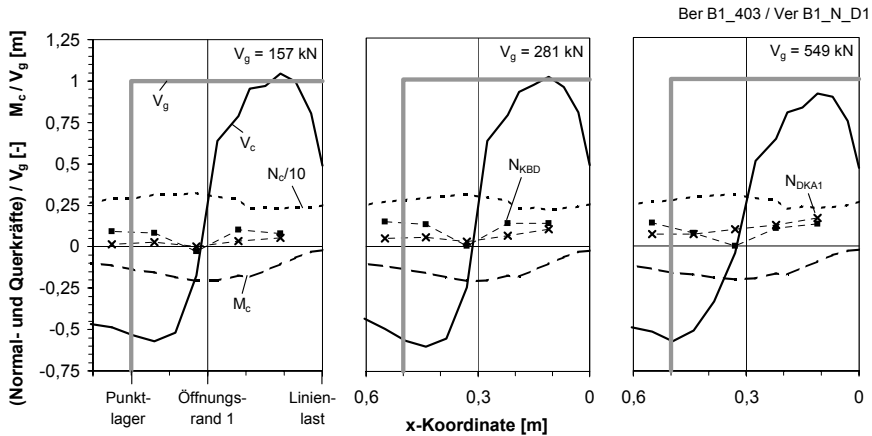


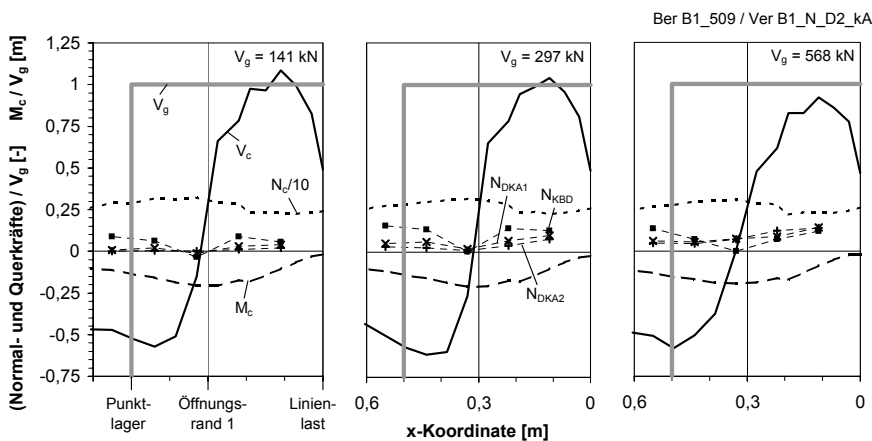
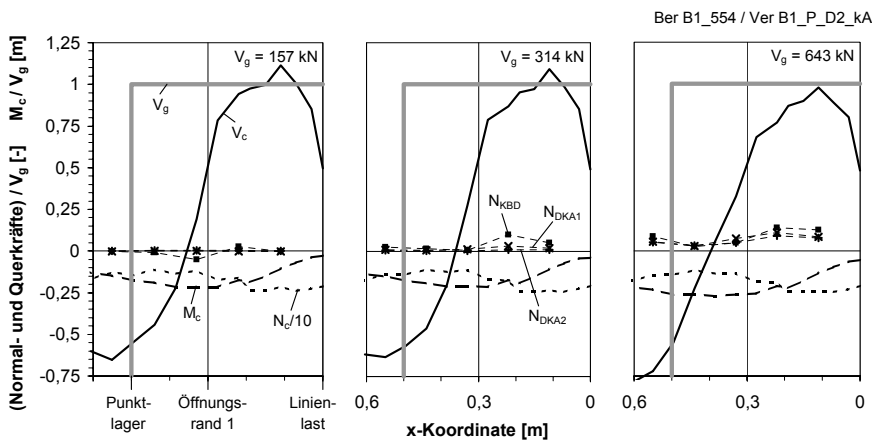
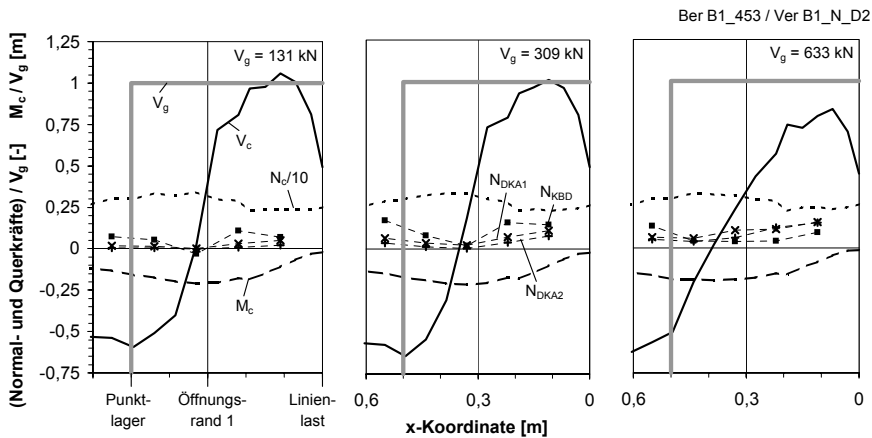


G. Schnittgrößen des Betongurts

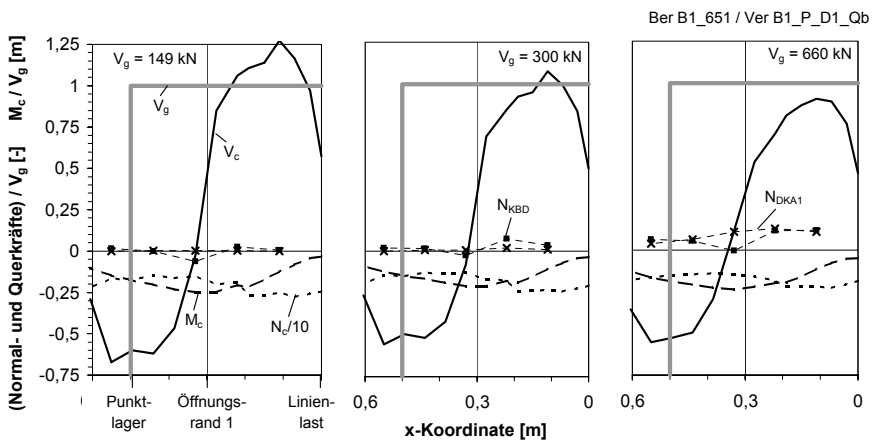
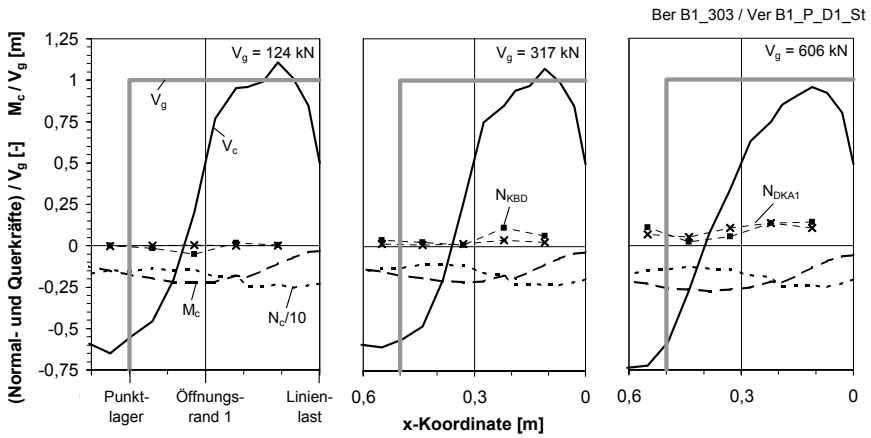
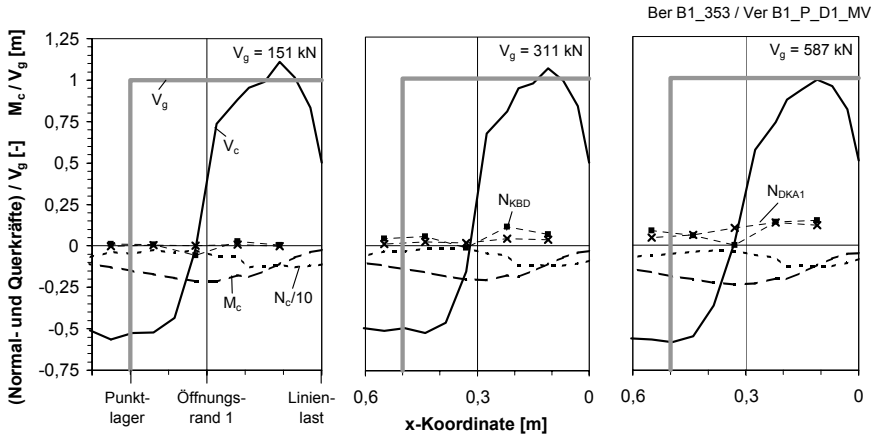
G.1. Bereich 1



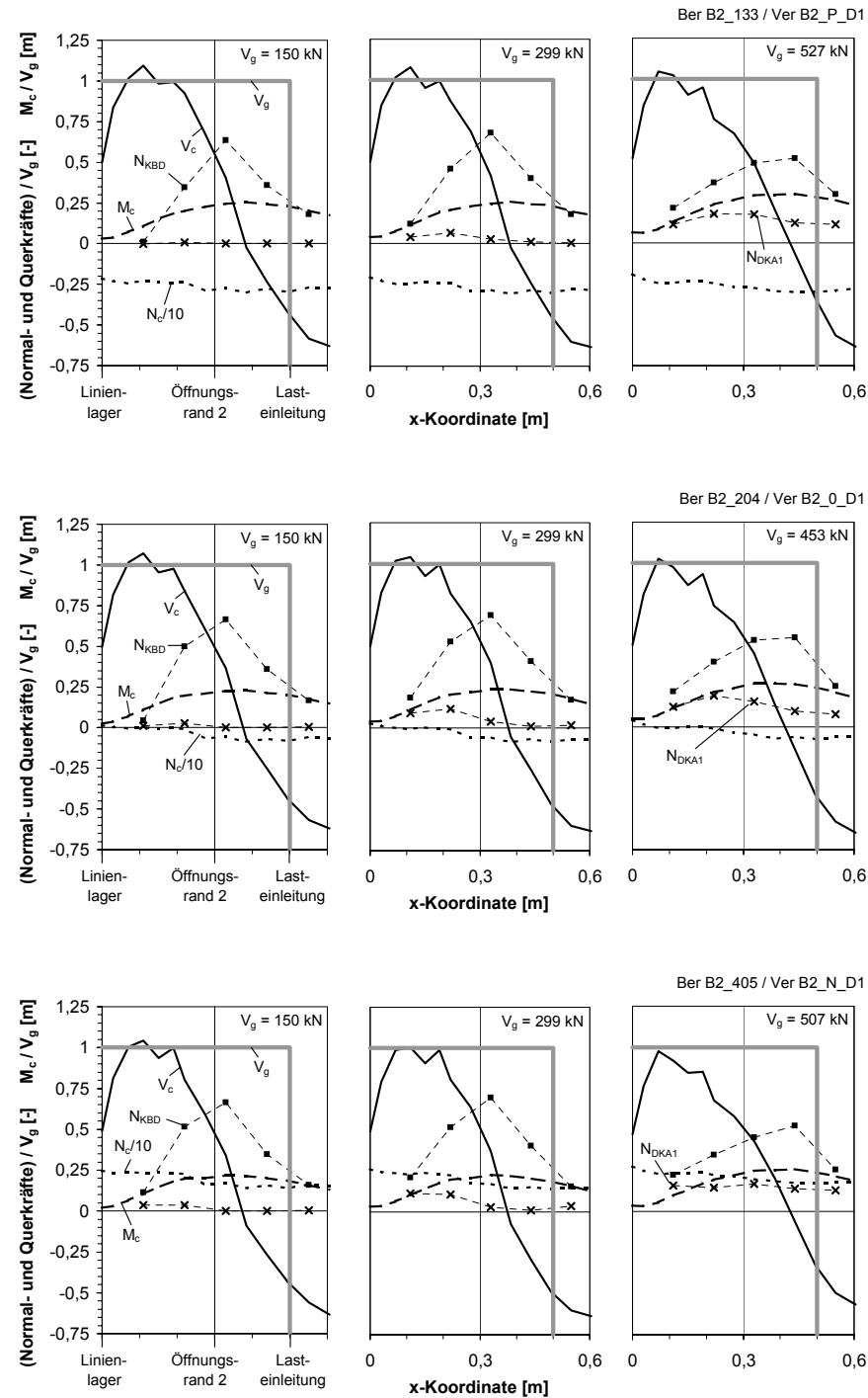


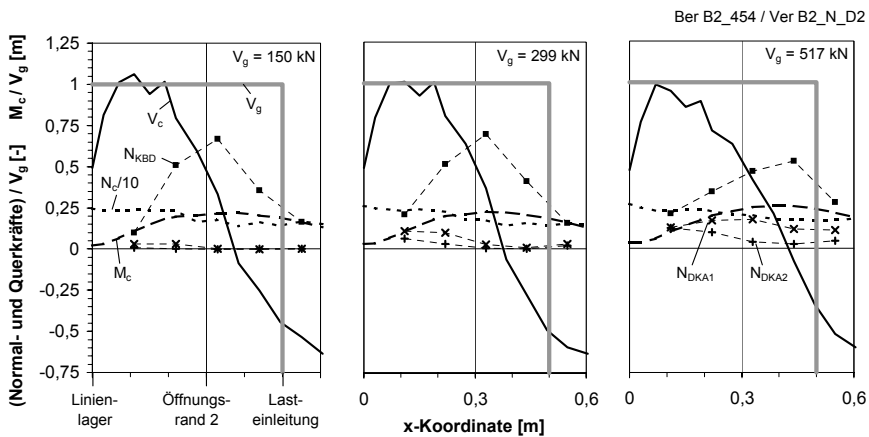
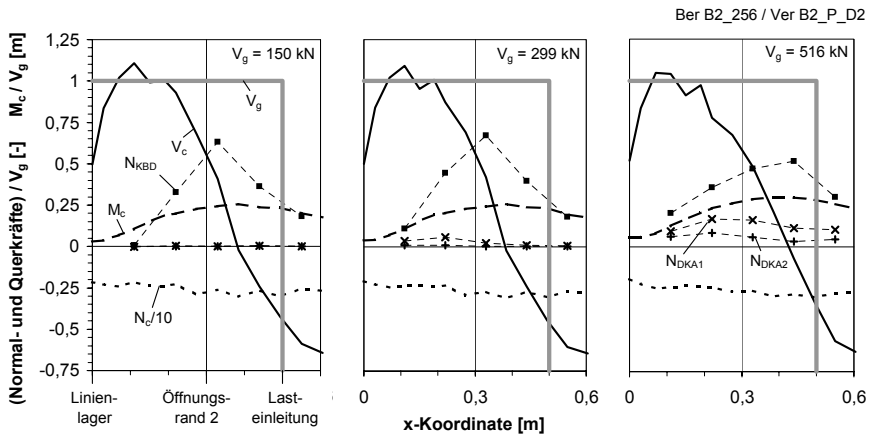
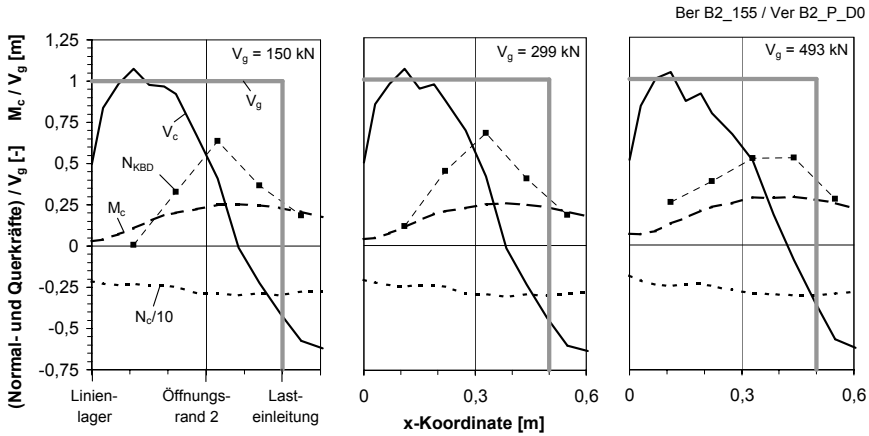


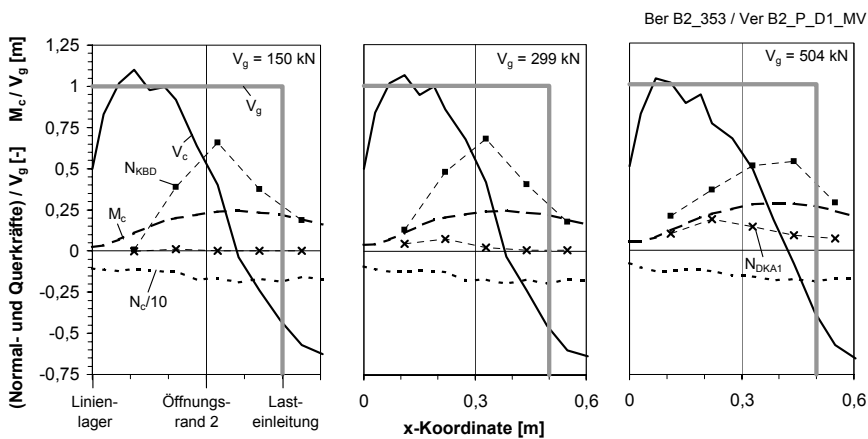
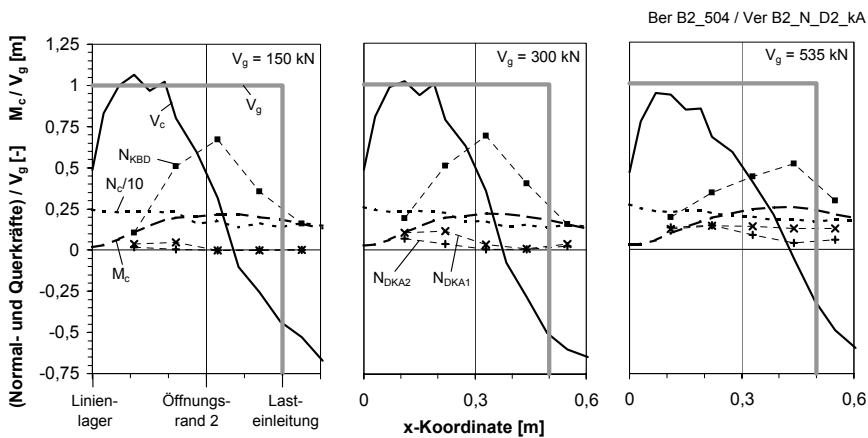
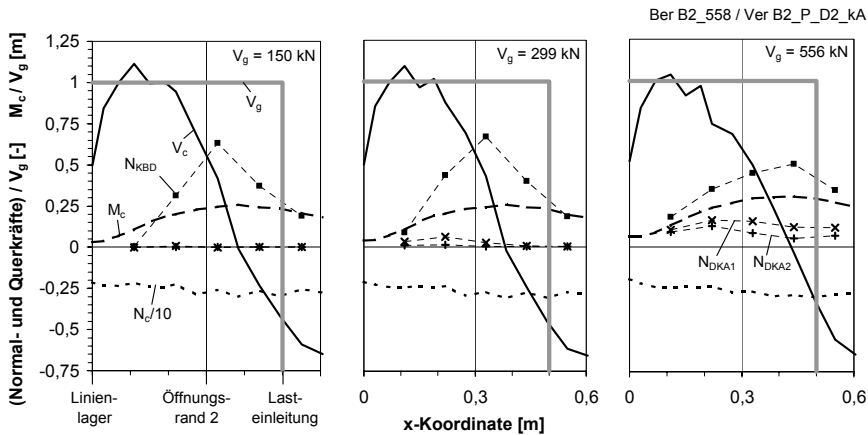
G. Schnittgrößen des Betongurts

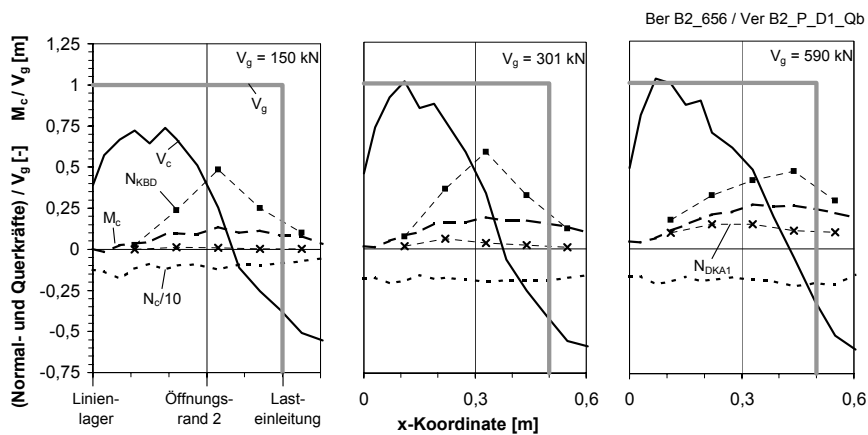
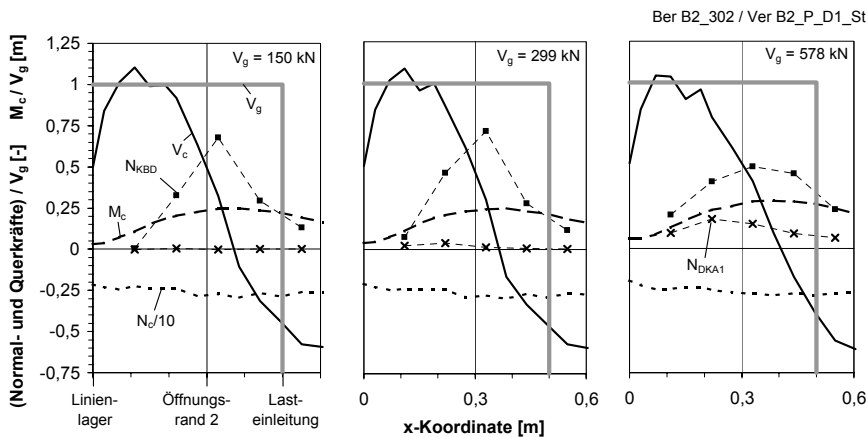


G.2. Bereich 2



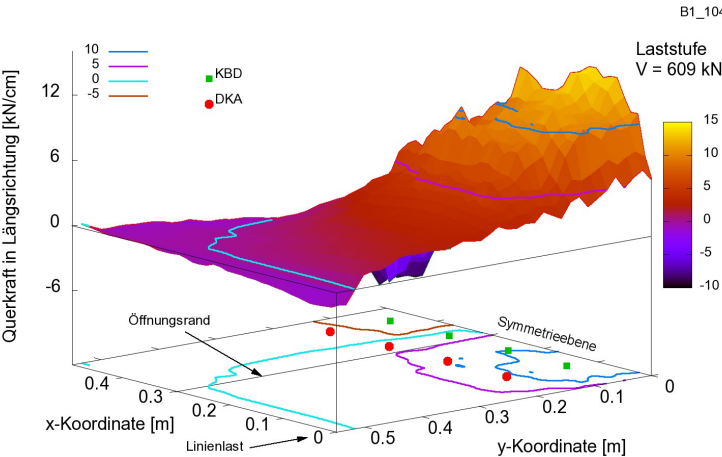
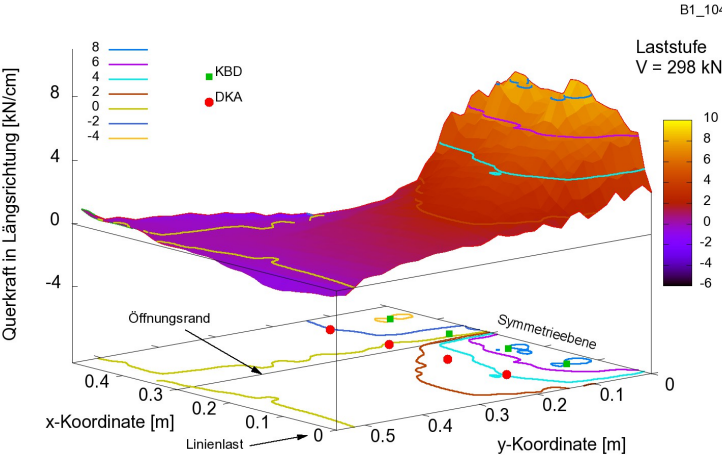
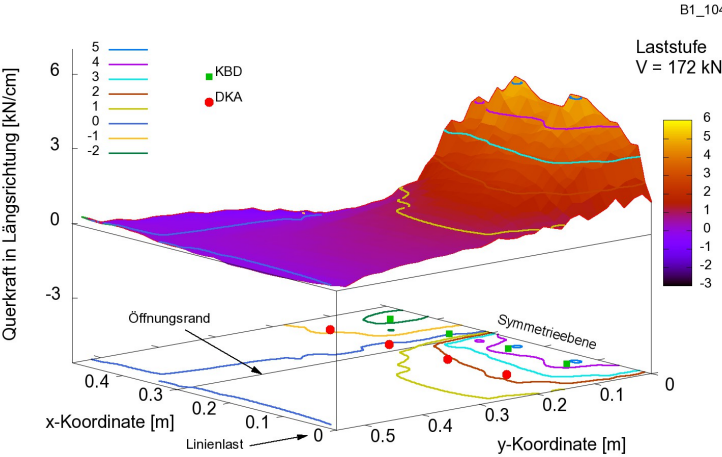


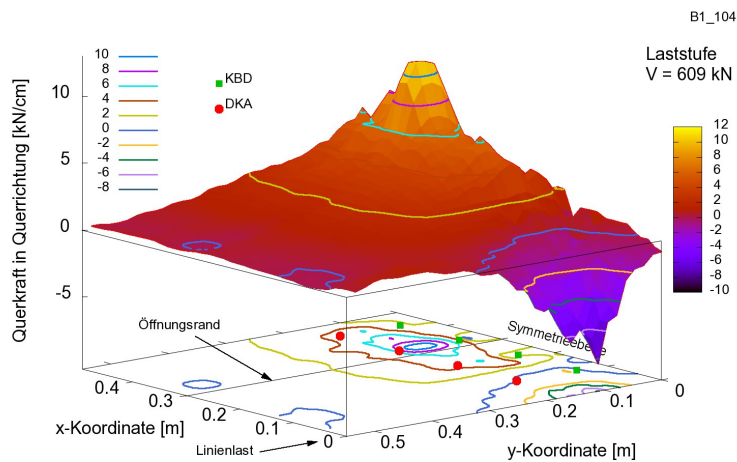
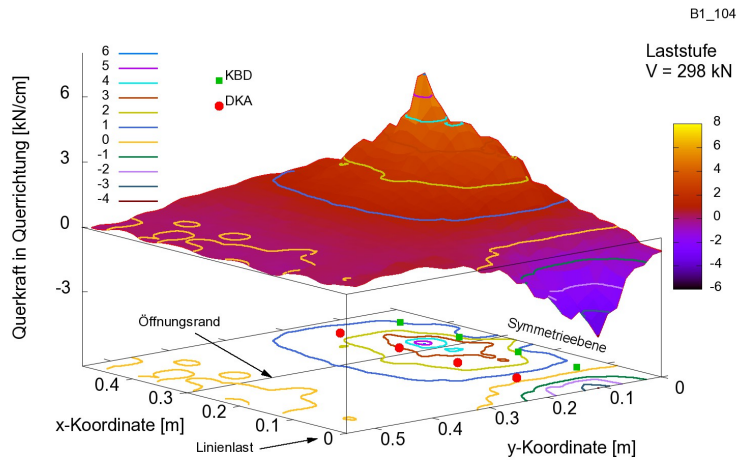
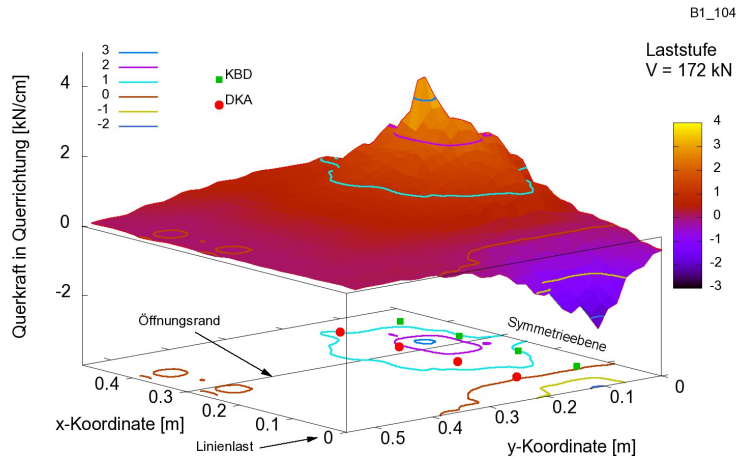




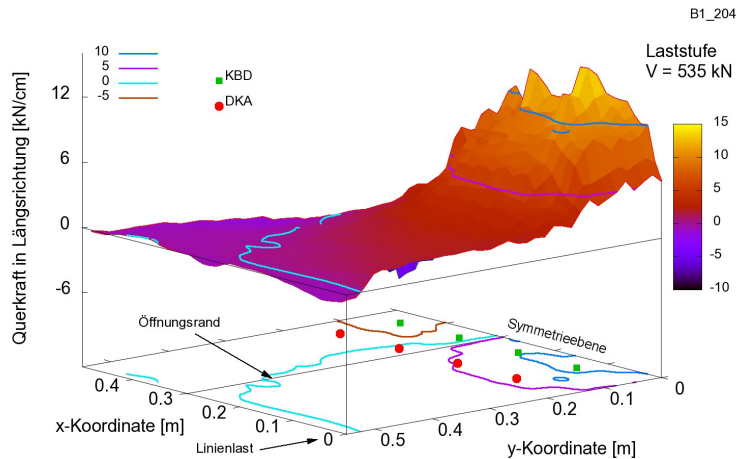
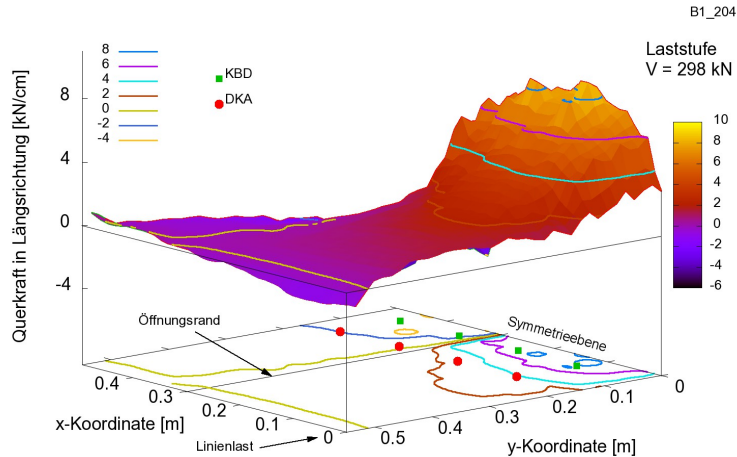
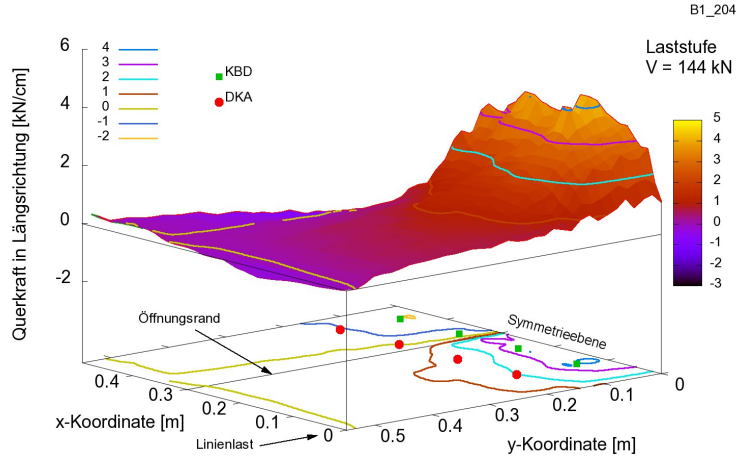
H. Verteilung der Querkraft im Betongurt

H.1. B1_P_D1

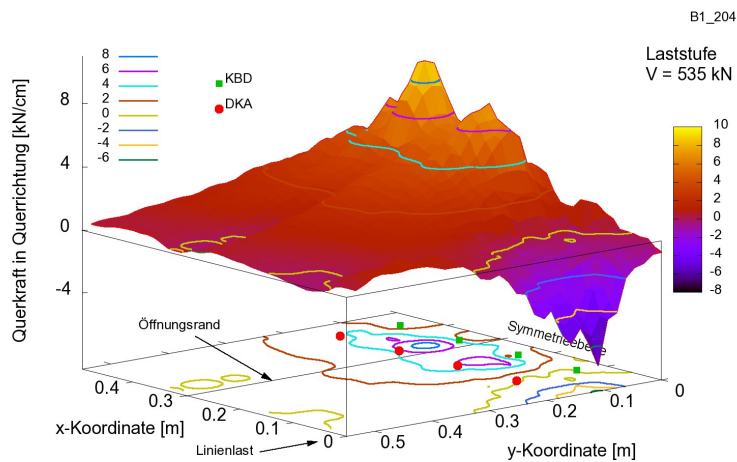
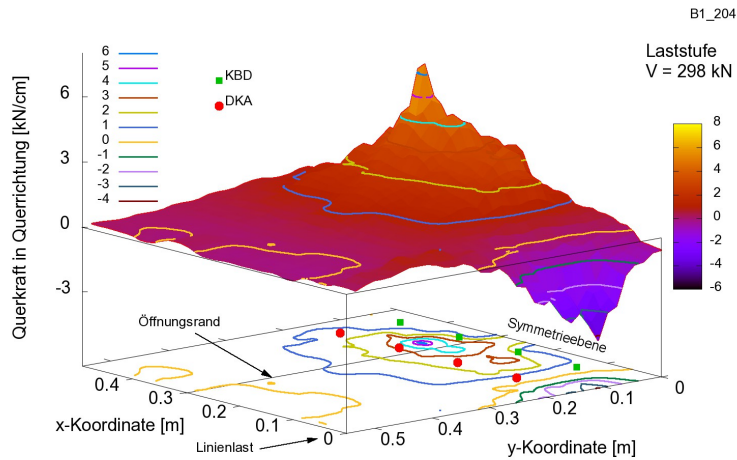
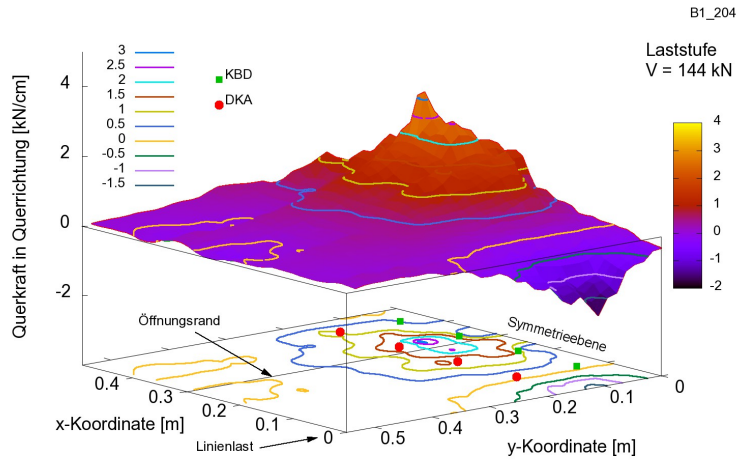




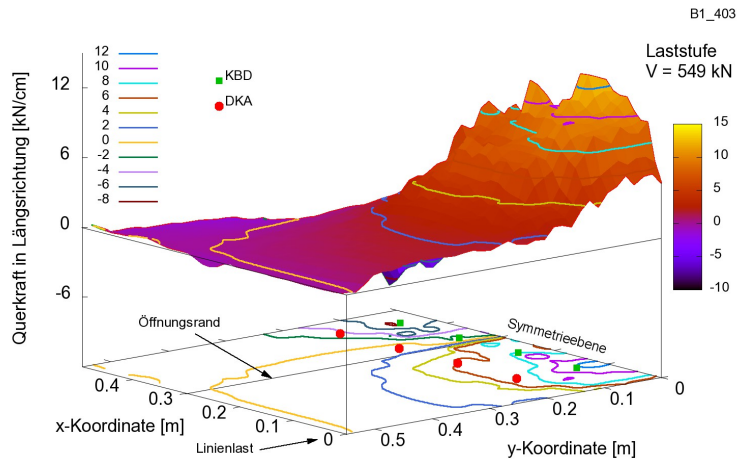
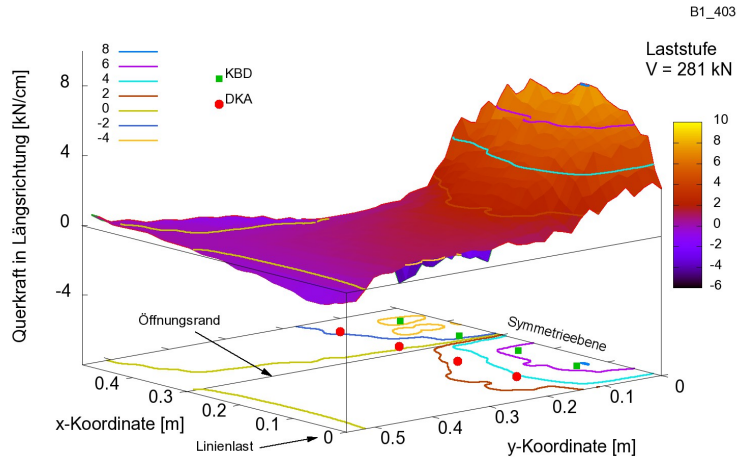
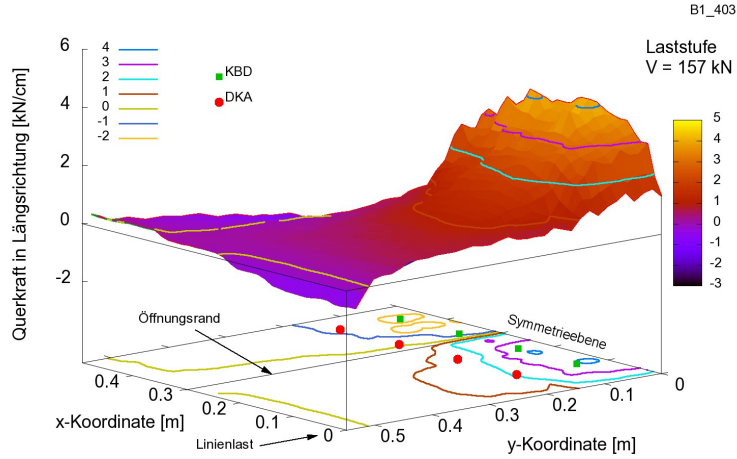
H.2. B1_0_D1

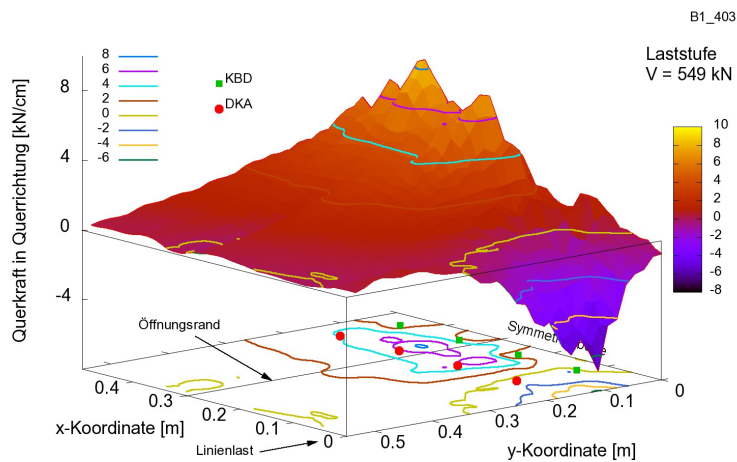
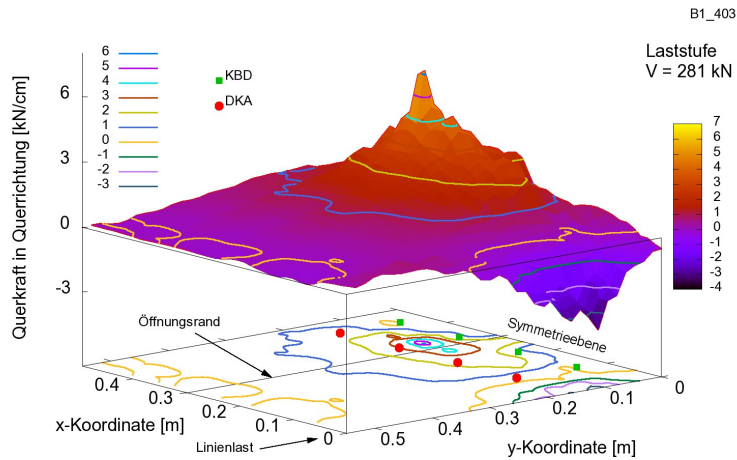
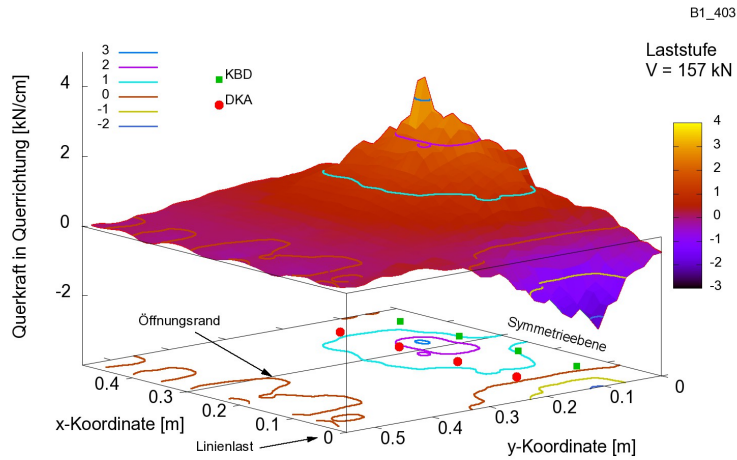


H. Verteilung der Querkraft im Betongurt

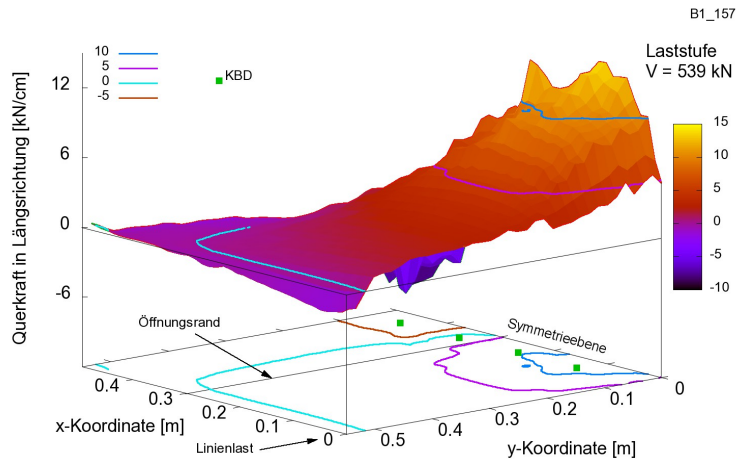
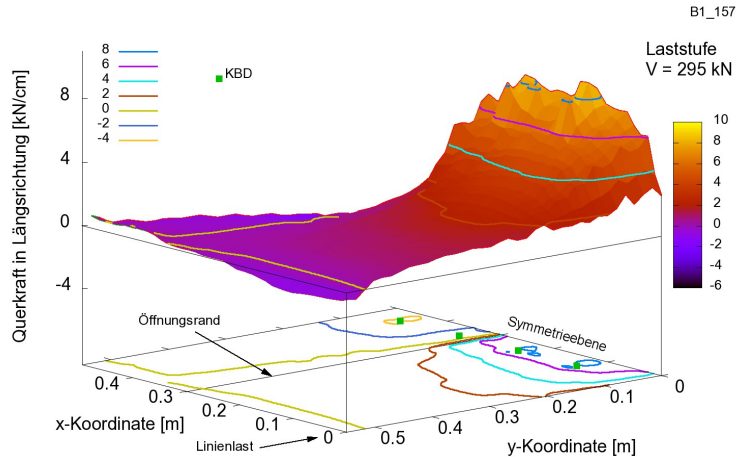
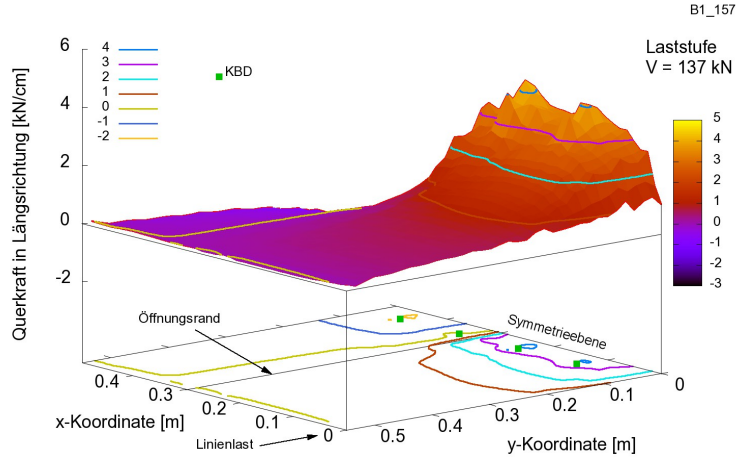


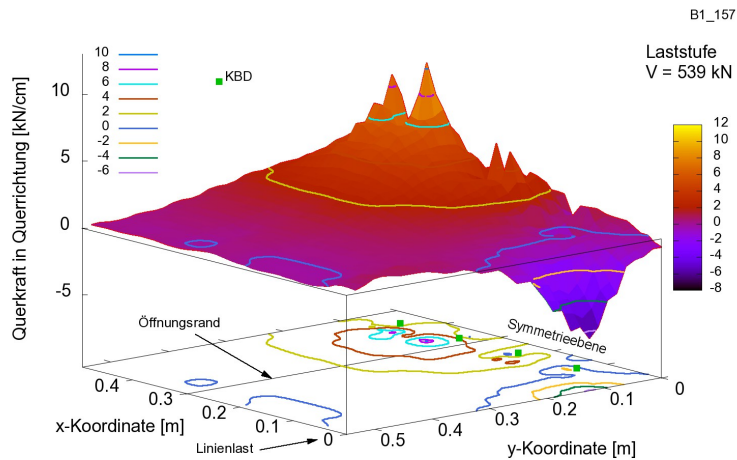
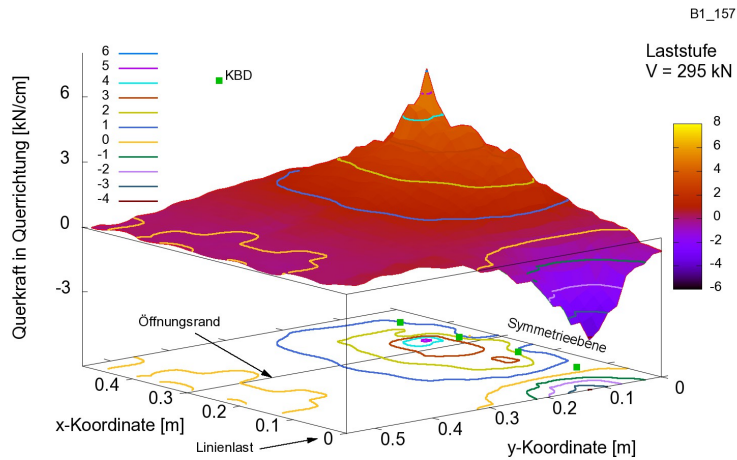
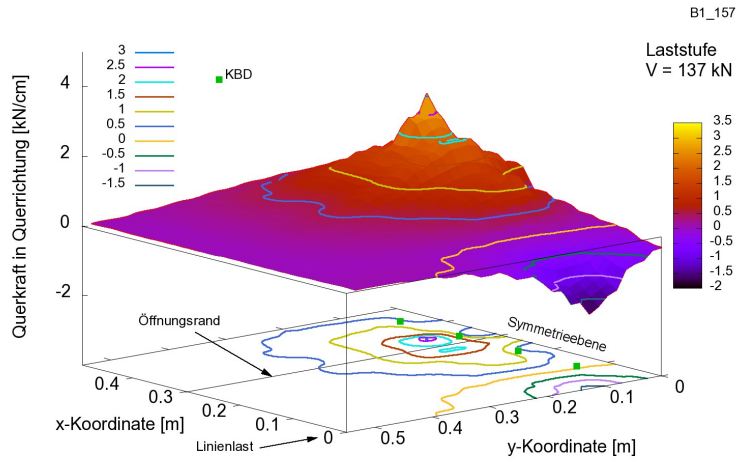
H.3. B1_N_D1



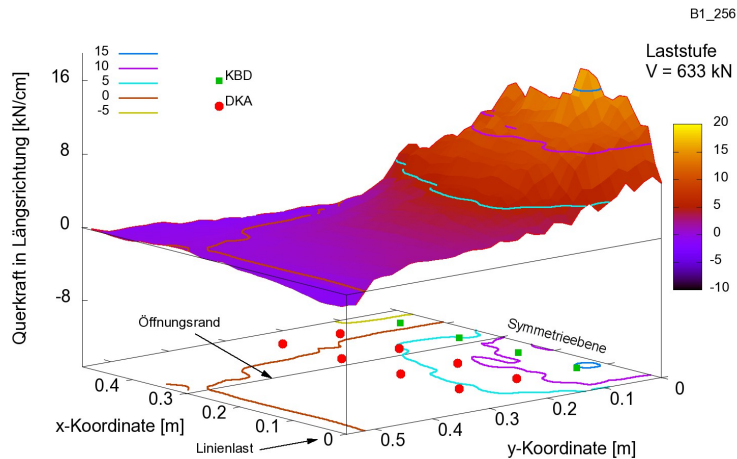
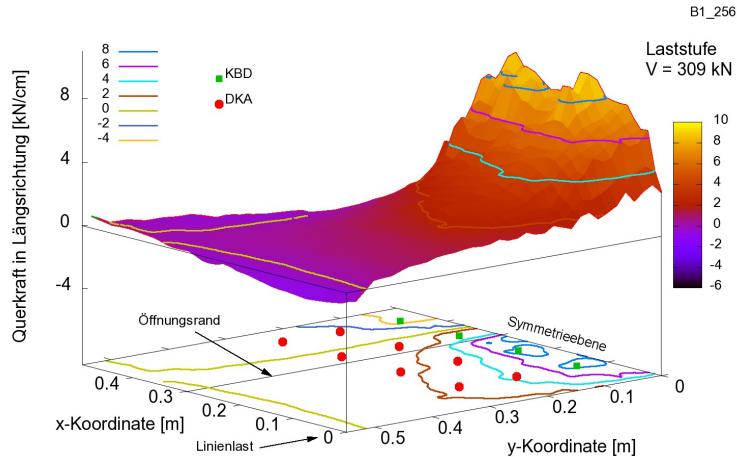
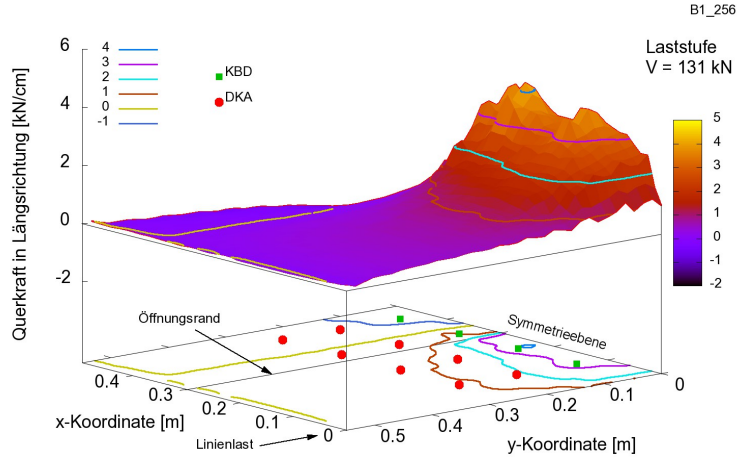


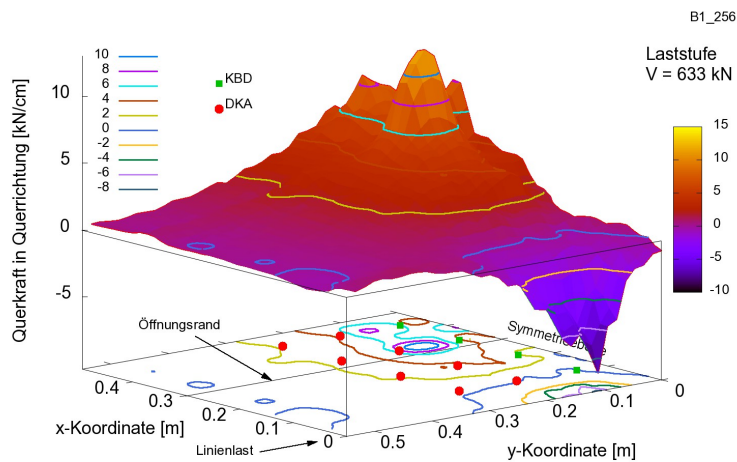
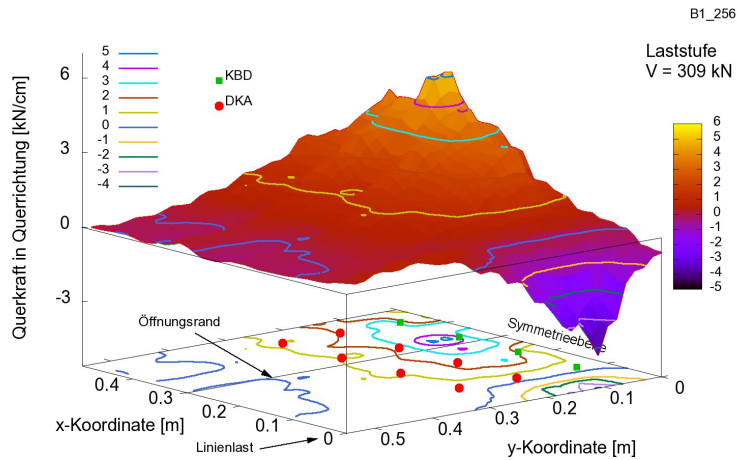
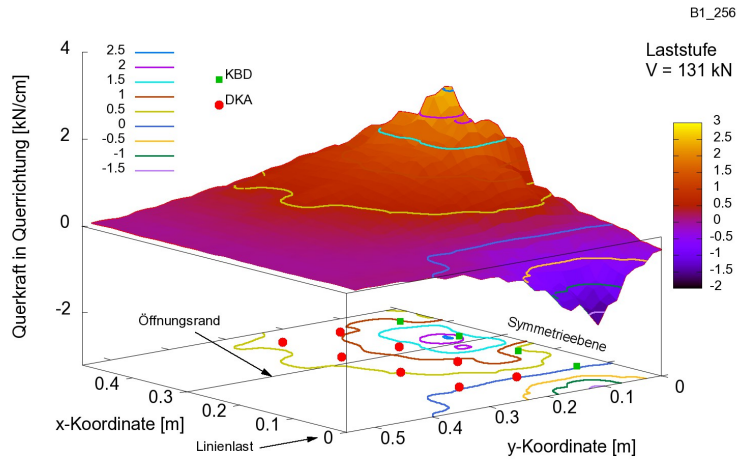
H.4. B1_P_D0



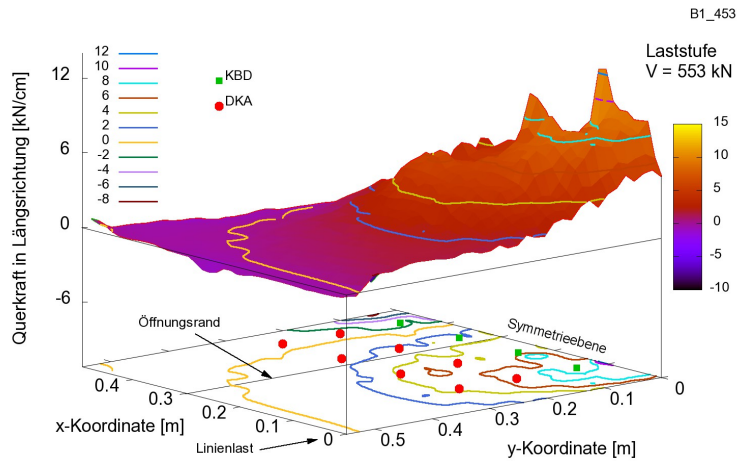
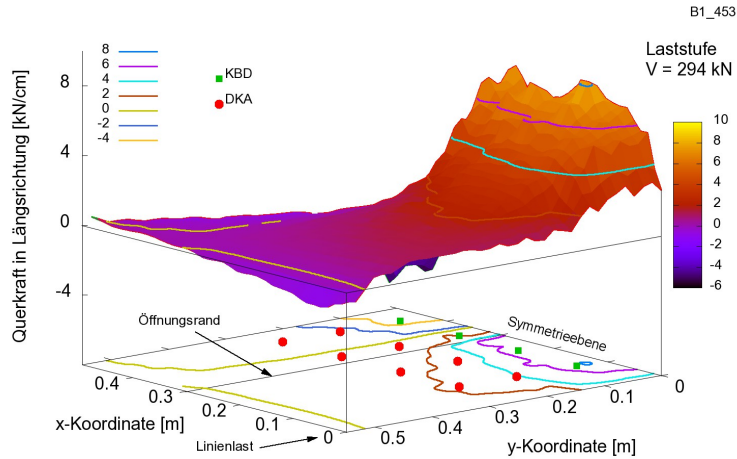
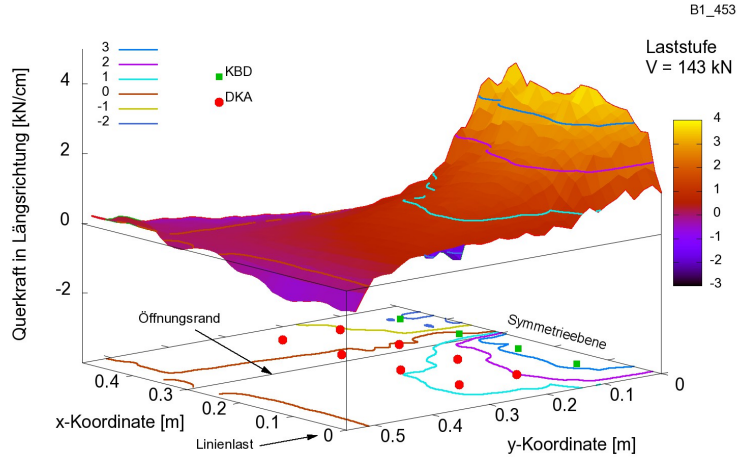


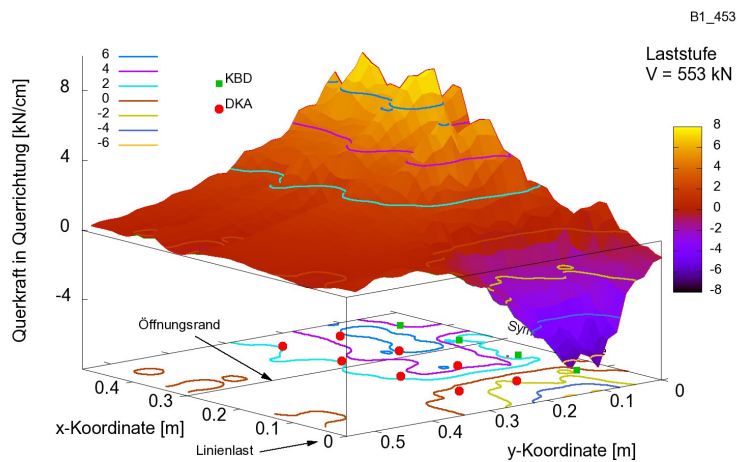
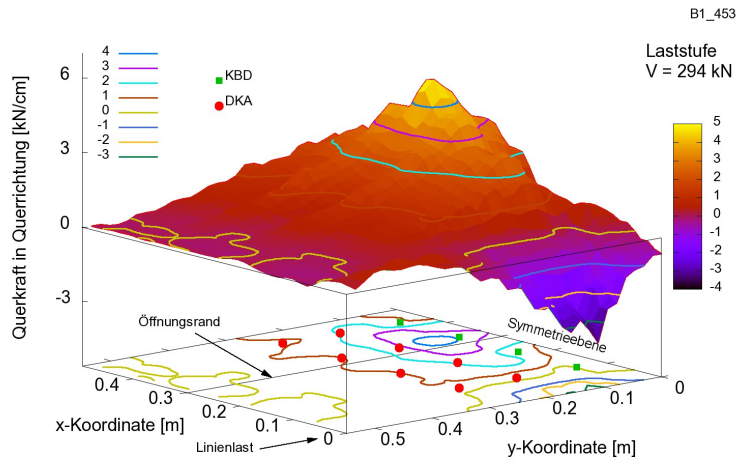
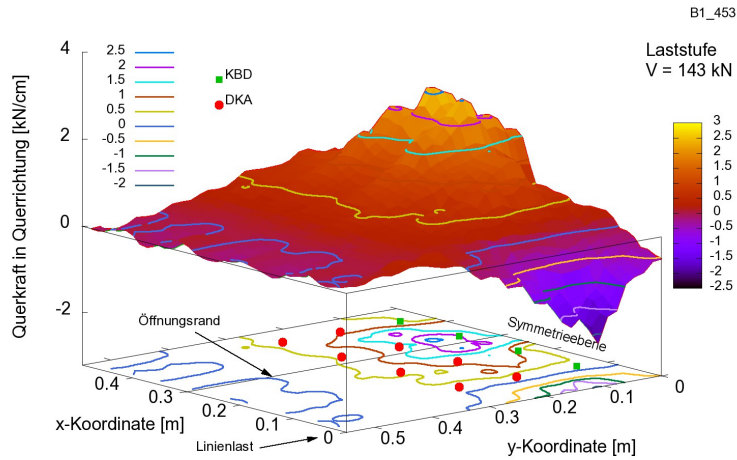
H.5. B1_P_D2



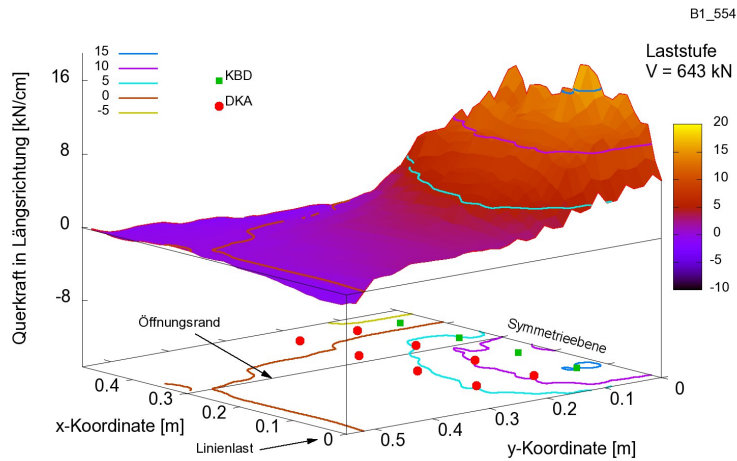
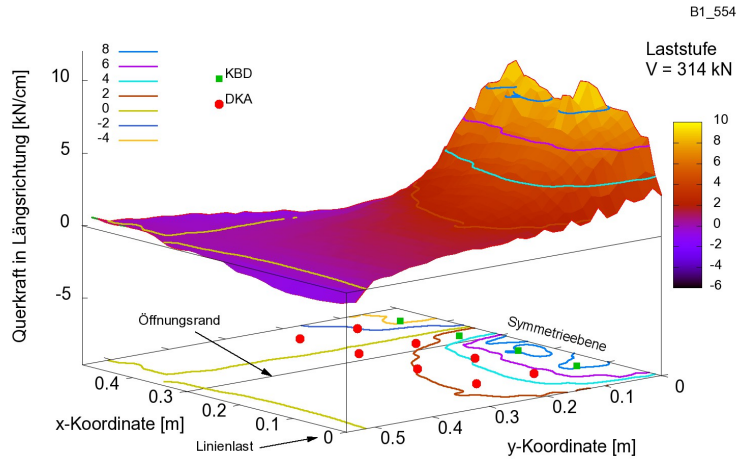
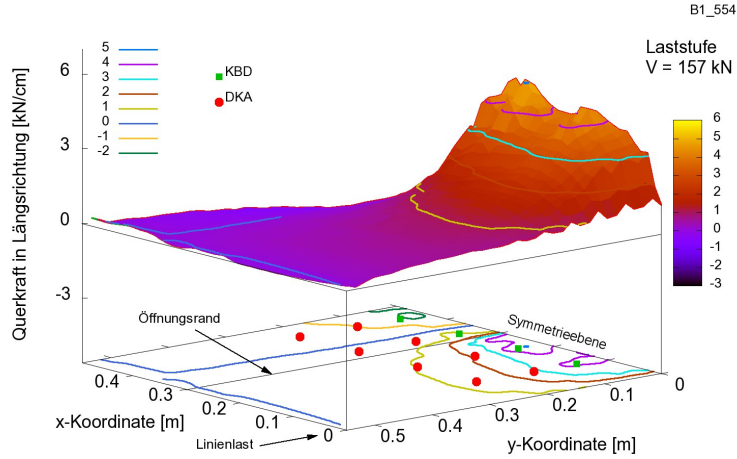


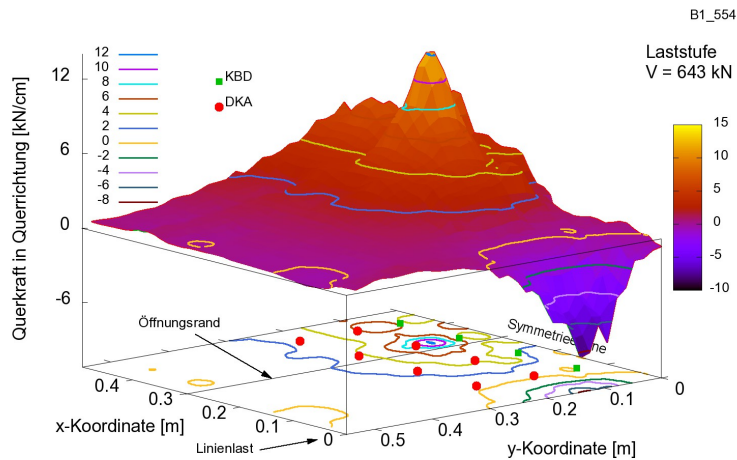
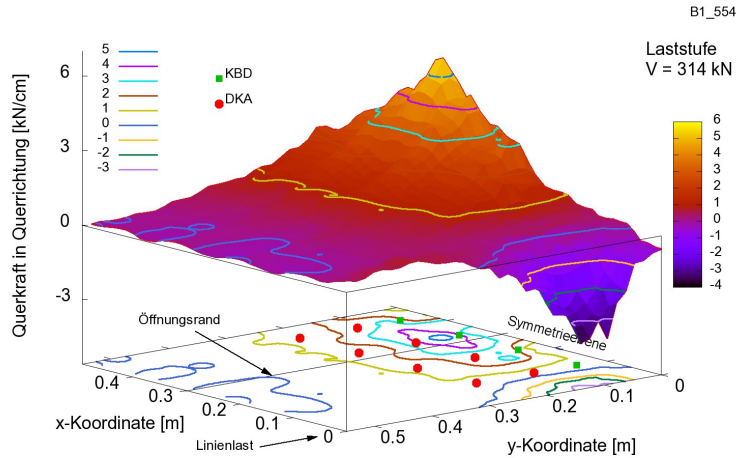
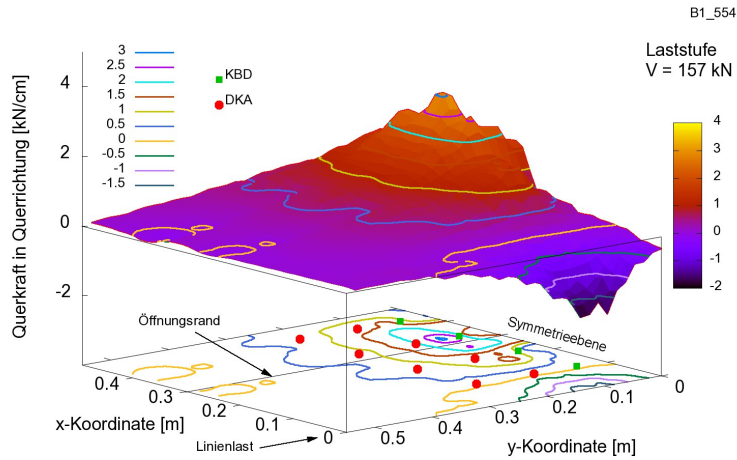
H.6. B1_N_D2



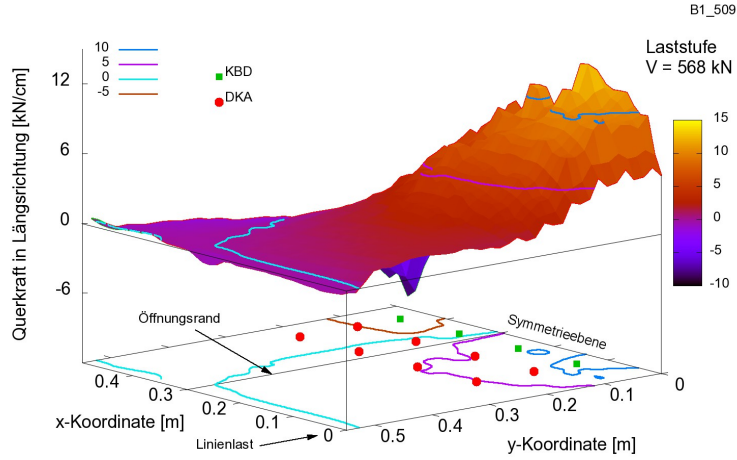
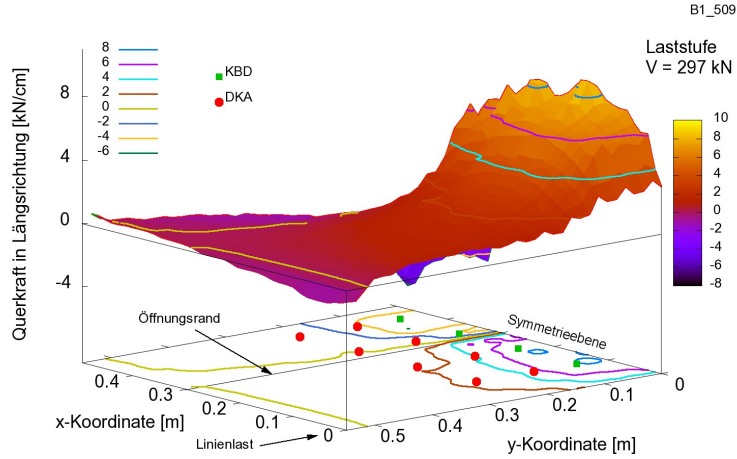
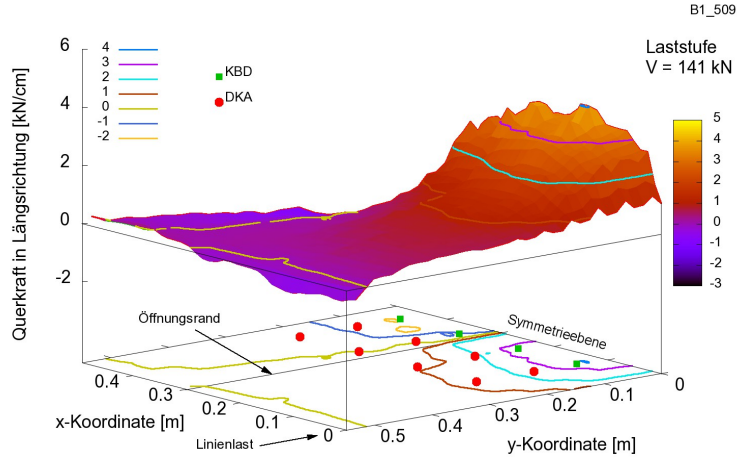


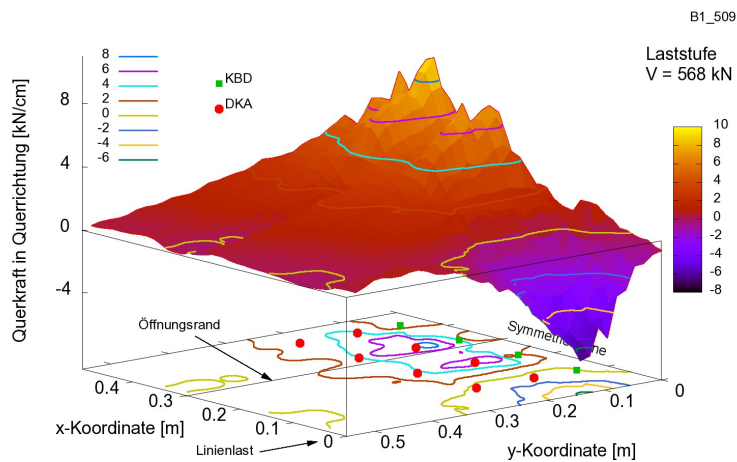
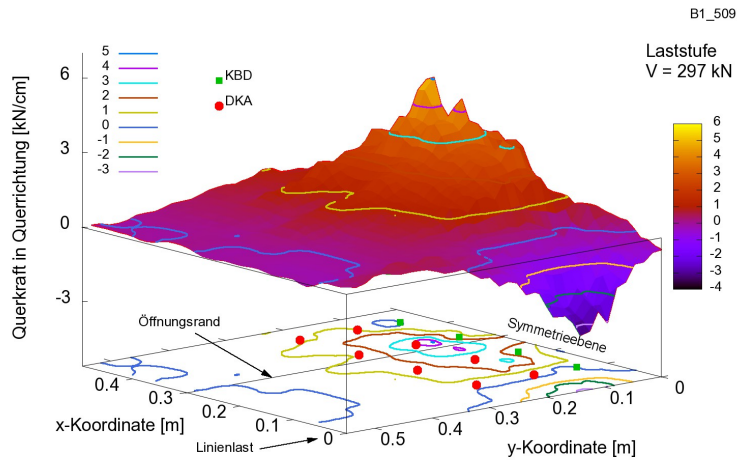
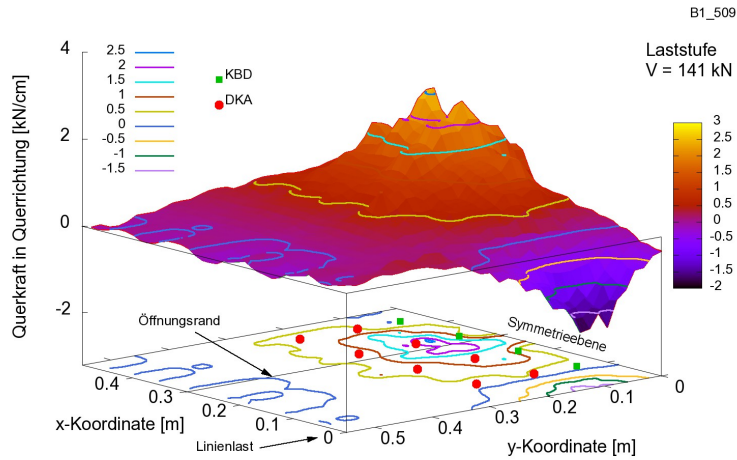
H.7. B1_P_D2_kA



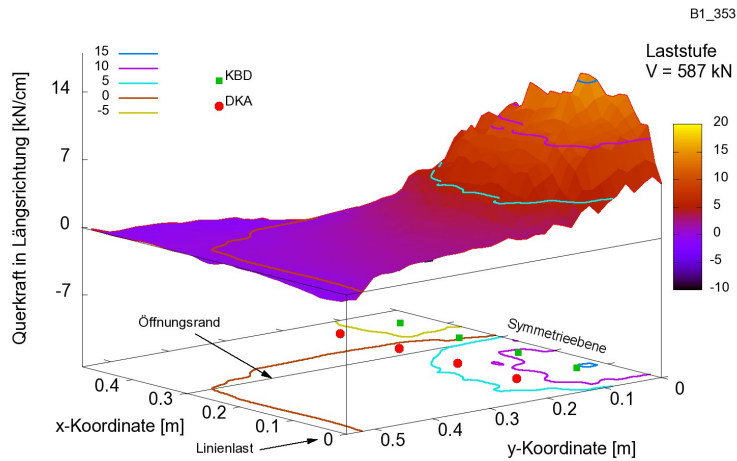
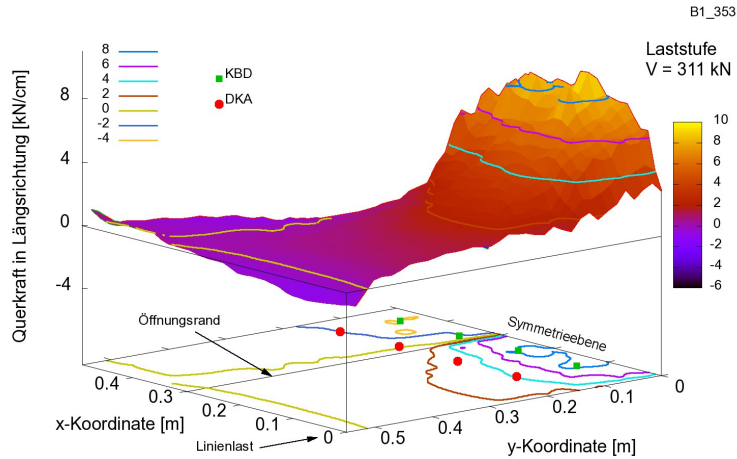
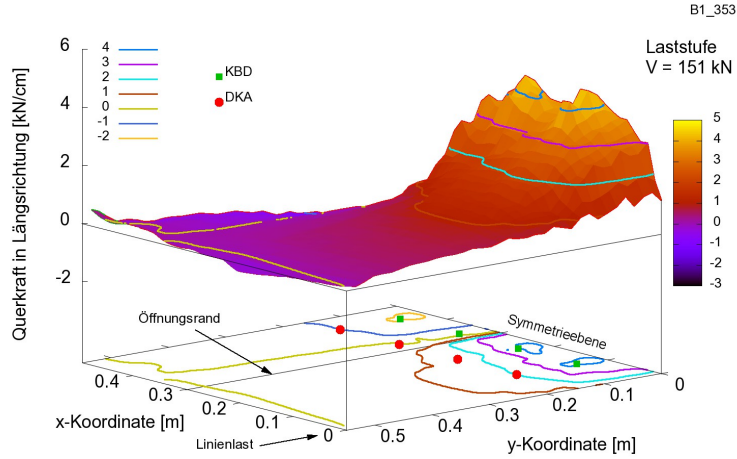


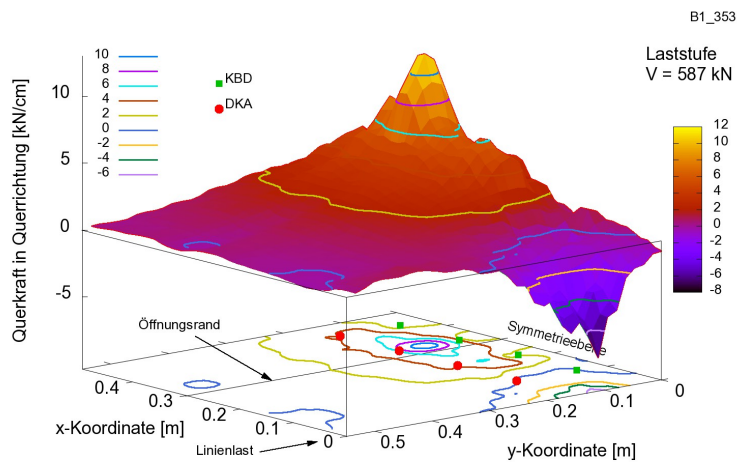
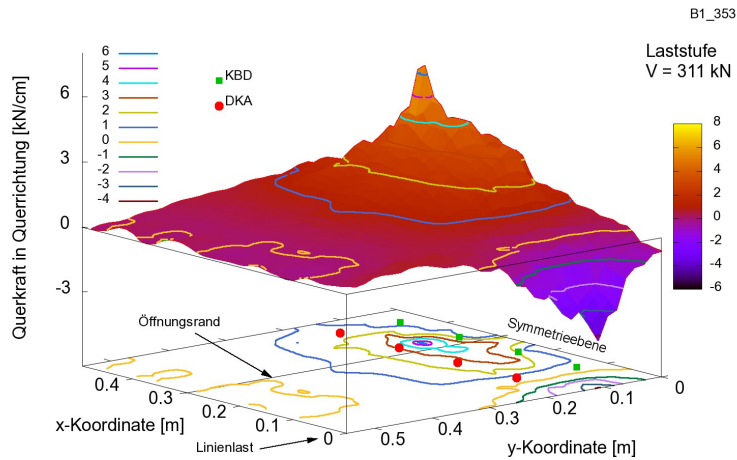
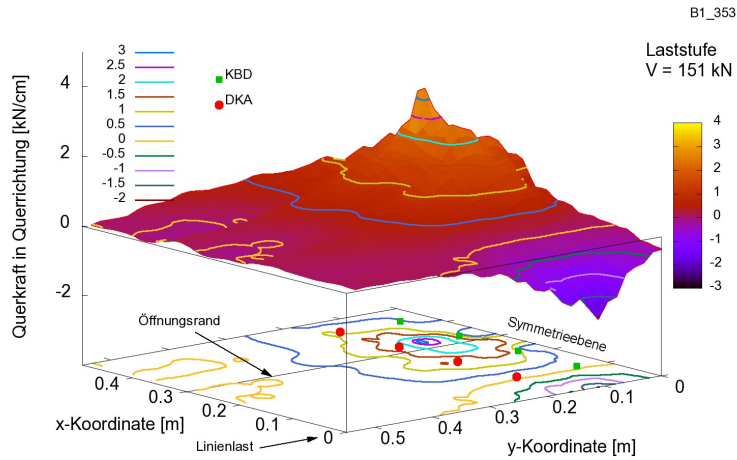
H.8. B1_N_D2_kA



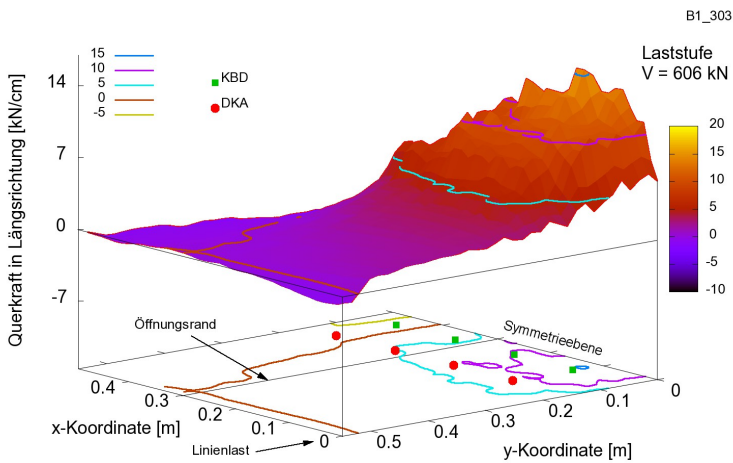
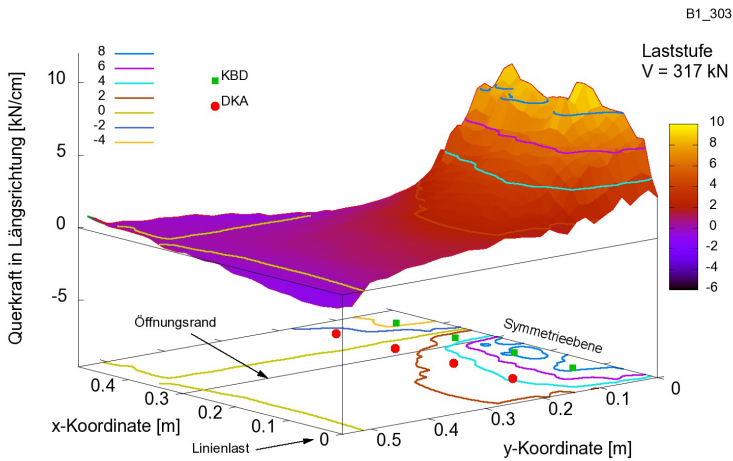
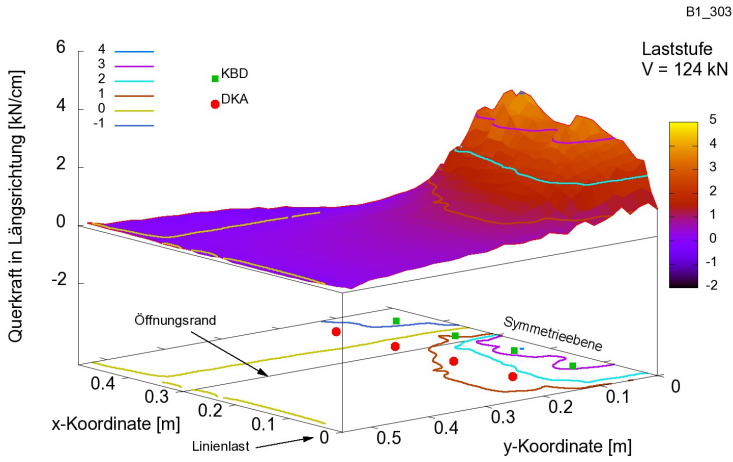


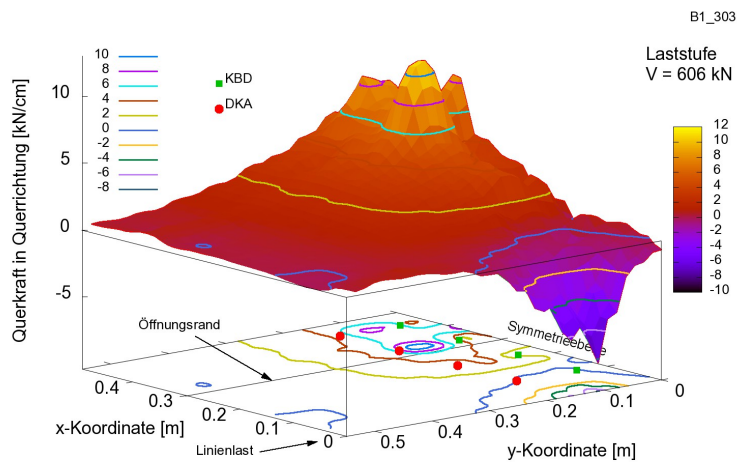
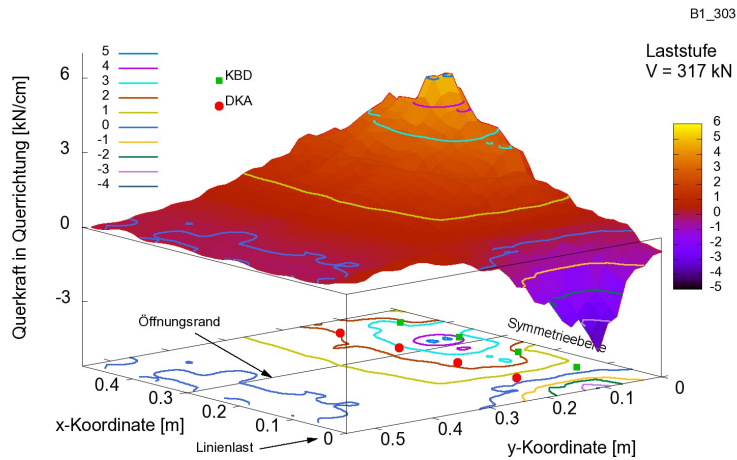
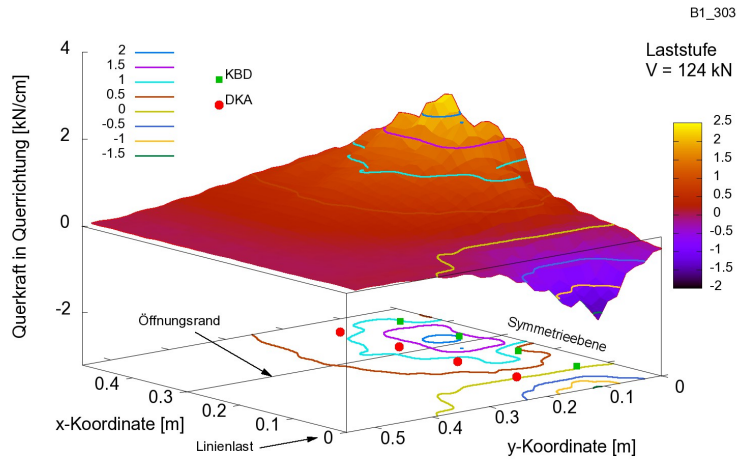
H.9. B1_P_D1_MV



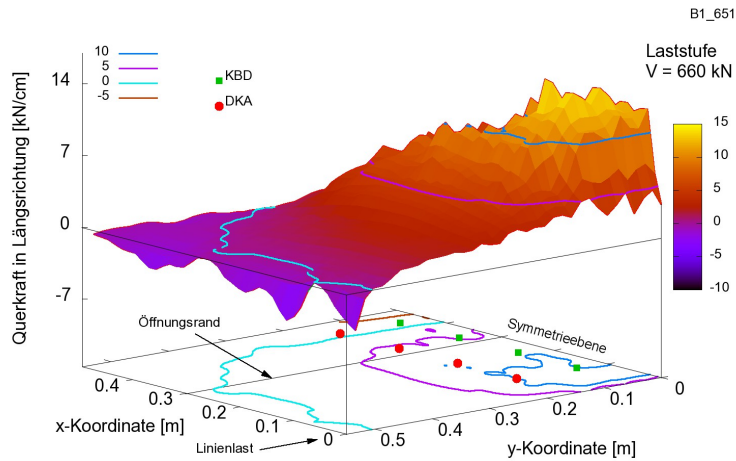
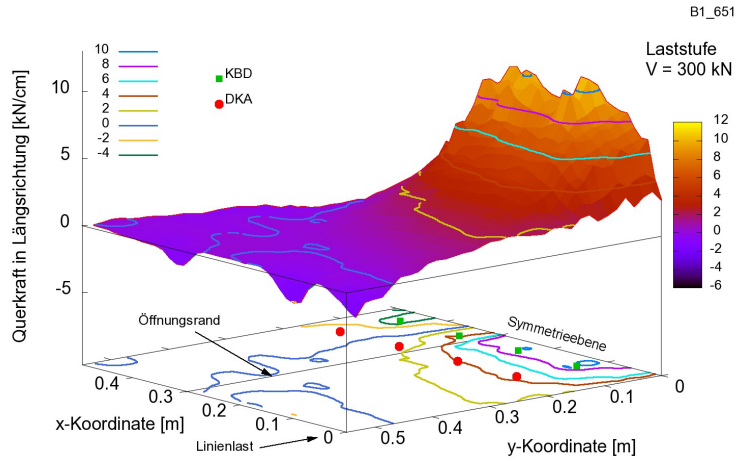
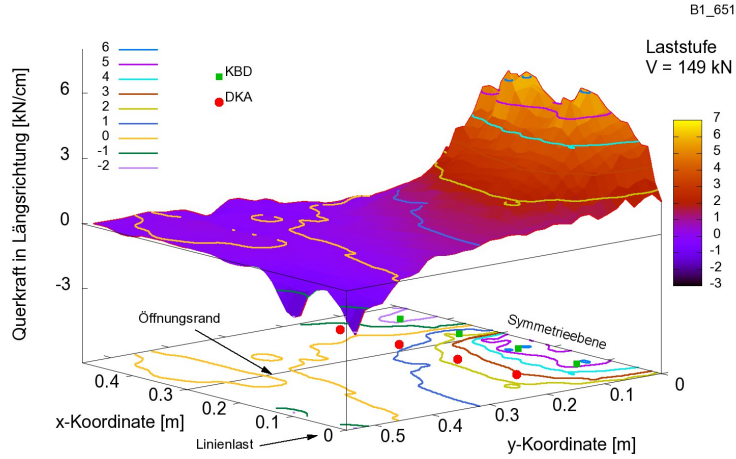


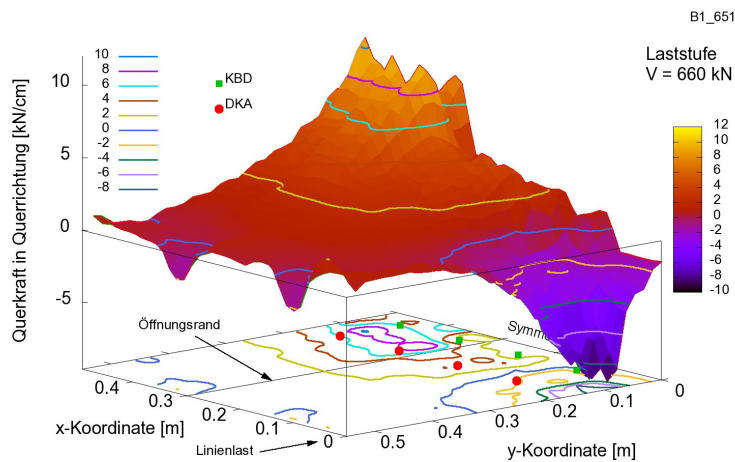
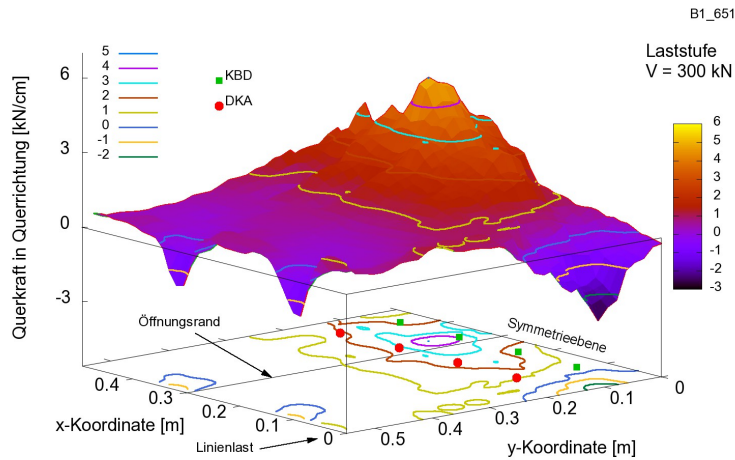
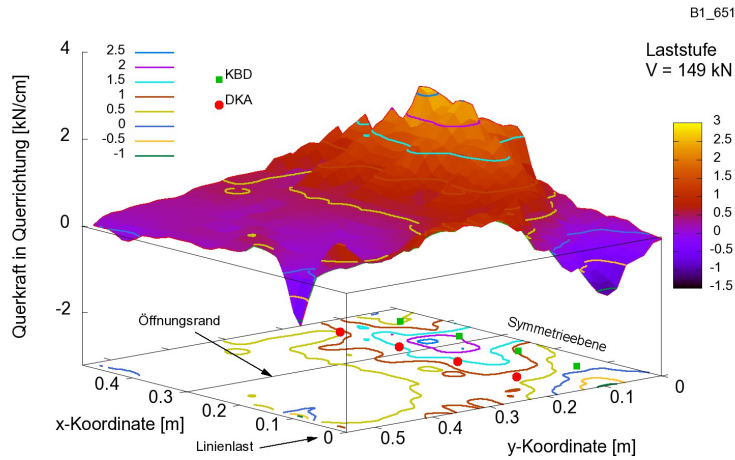
H.10. B1_P_D1_St



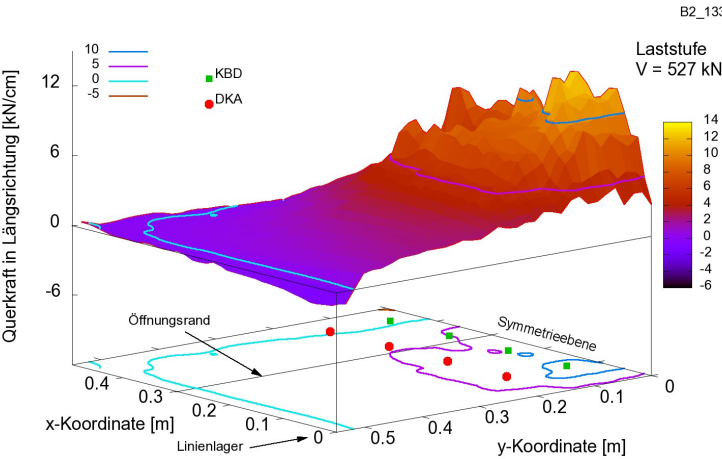
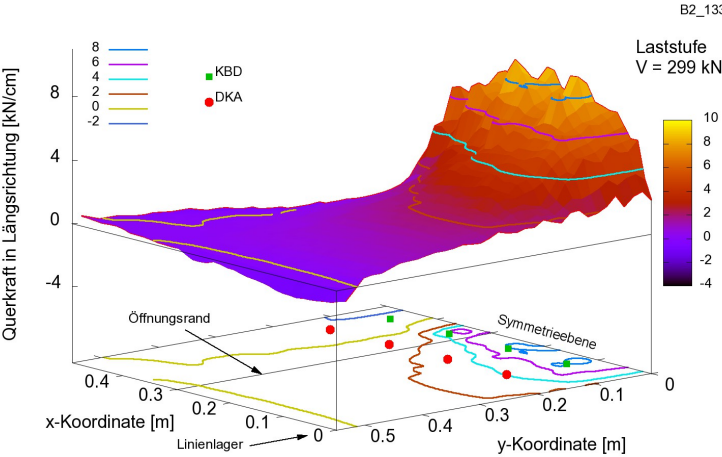
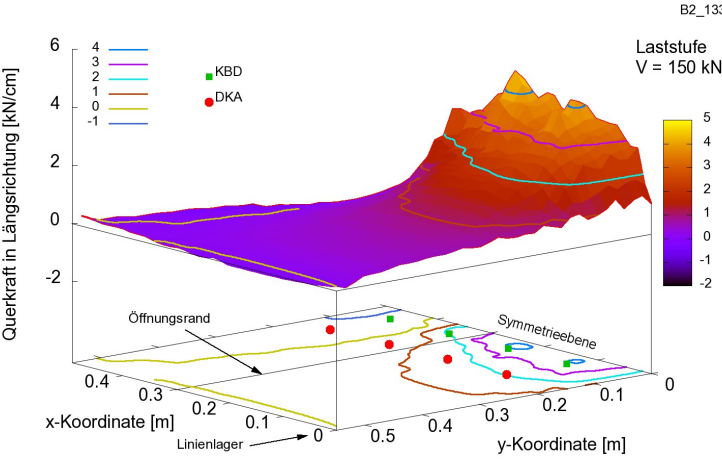


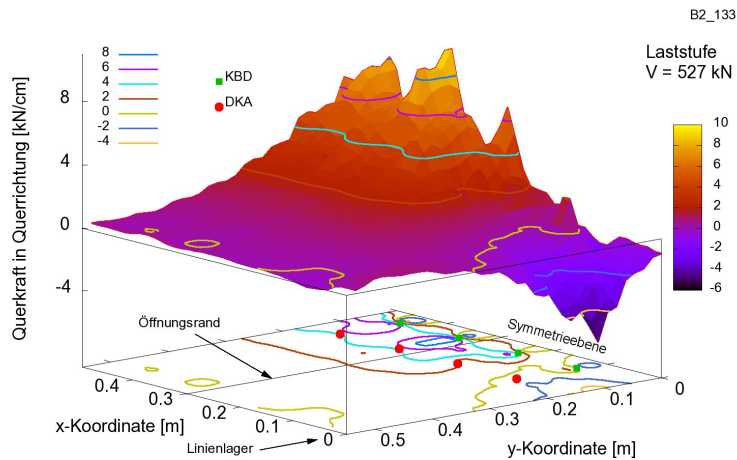
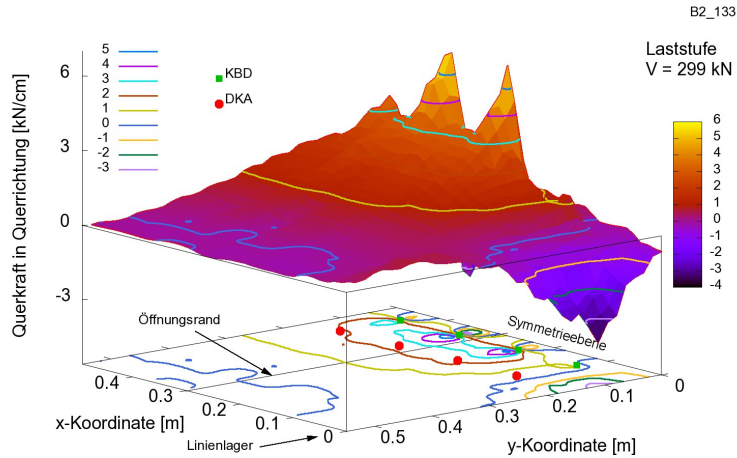
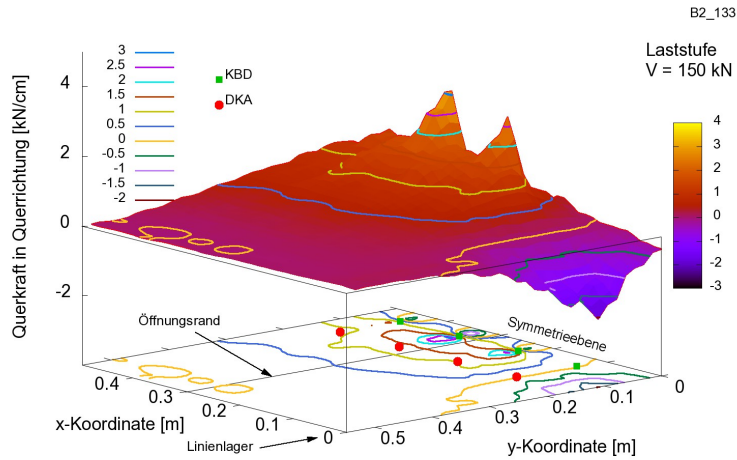
H.11. B1_P_D1_Qb



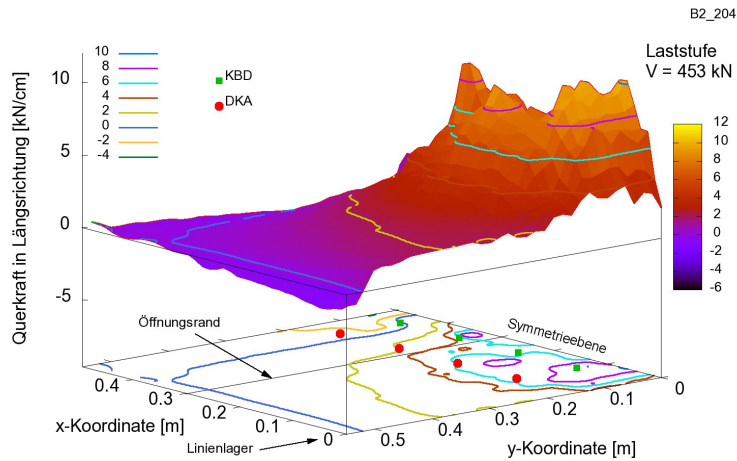
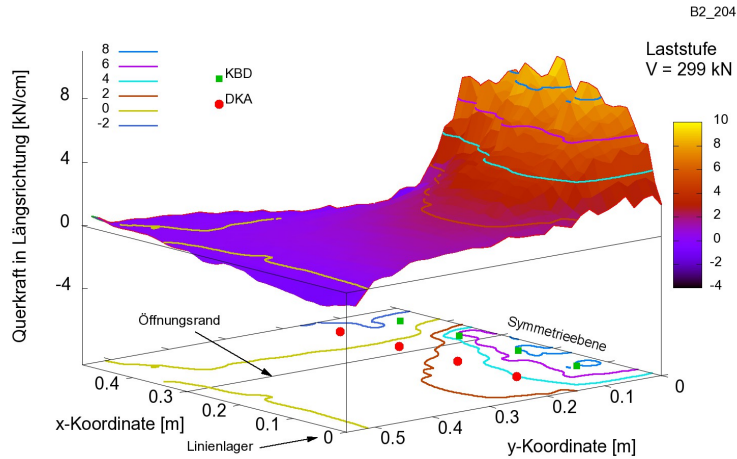
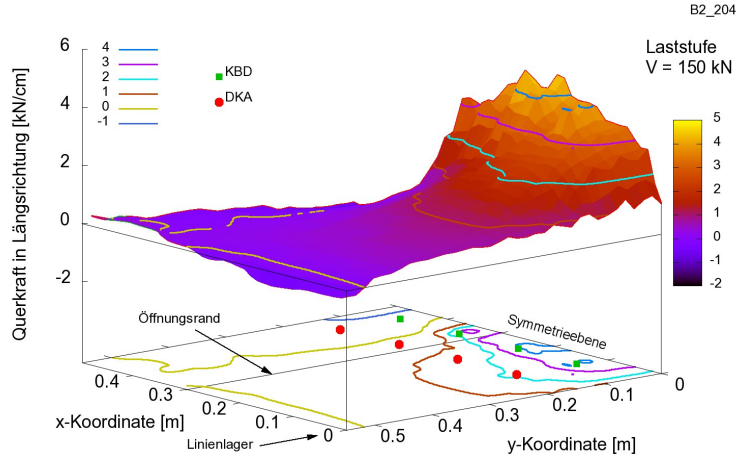


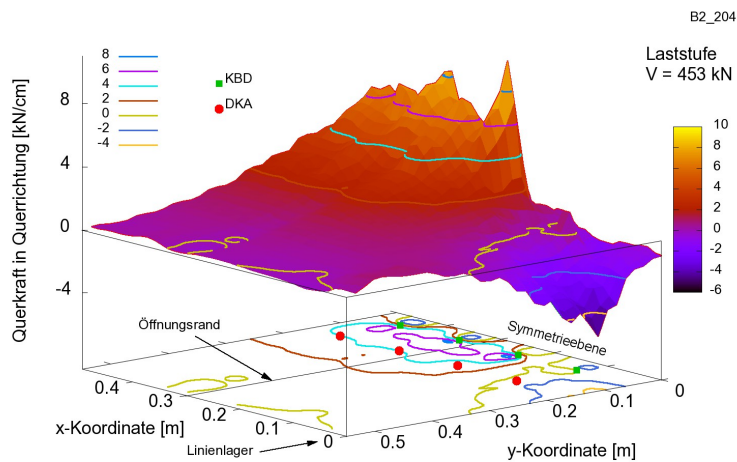
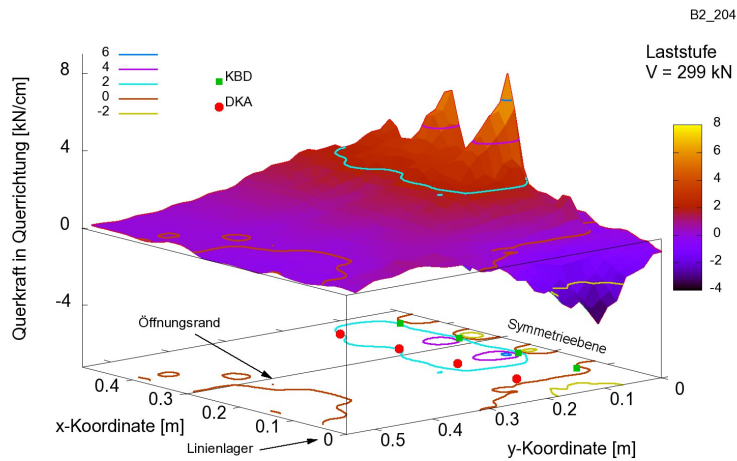
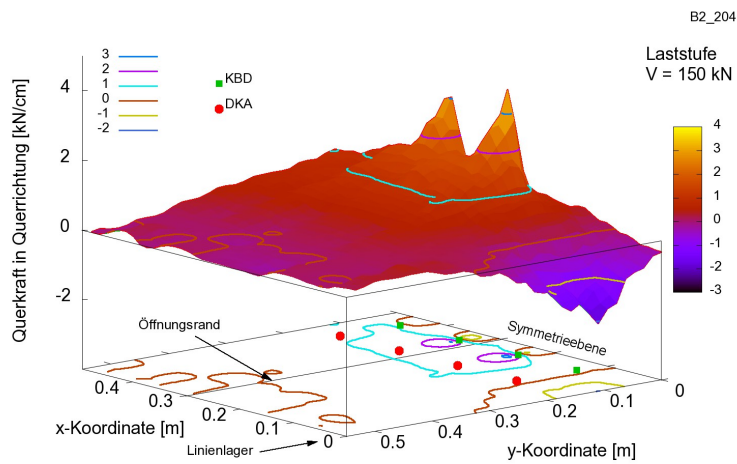
H.12. B2_P_D1



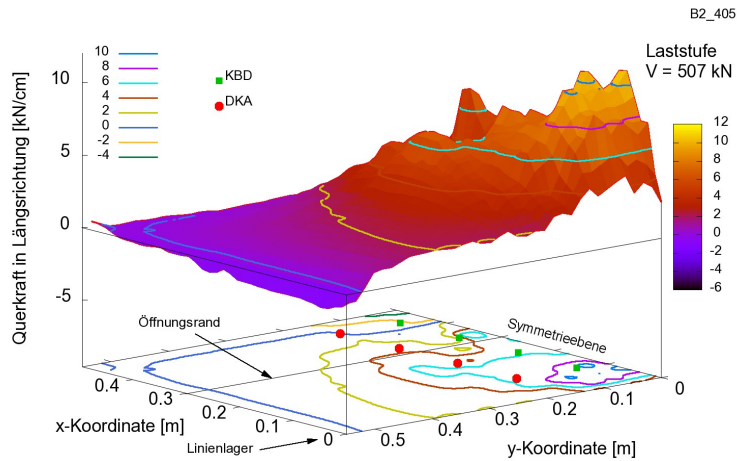
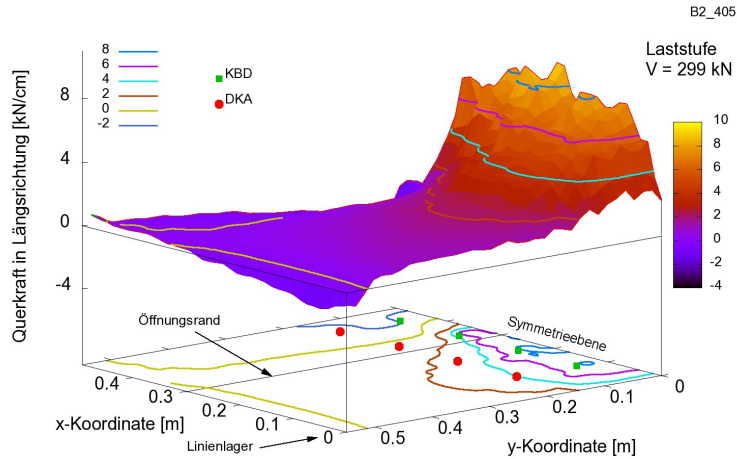
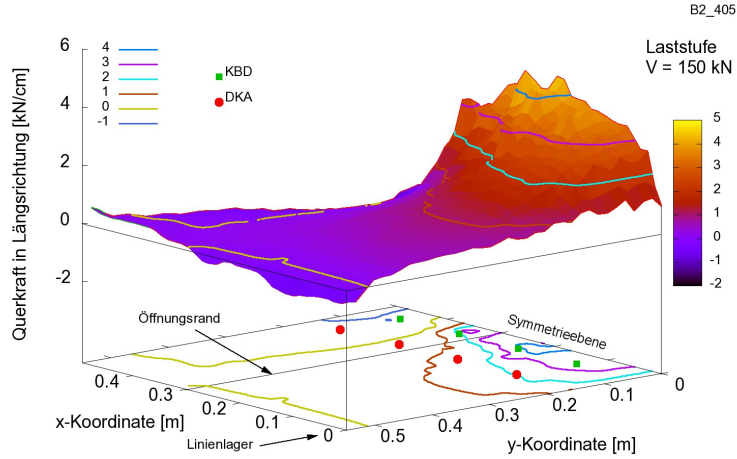


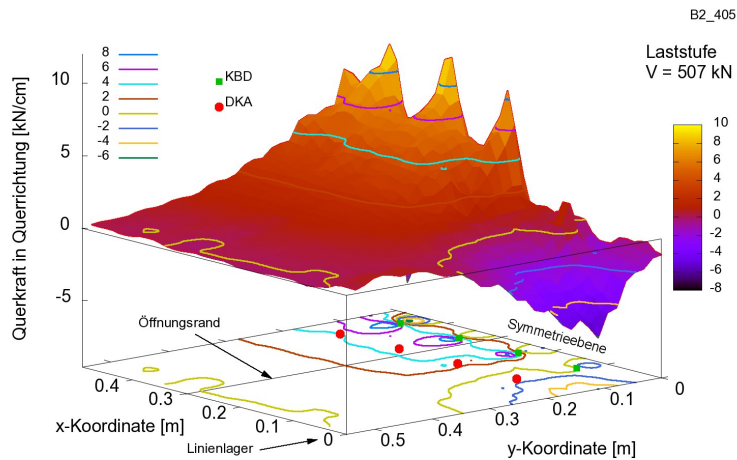
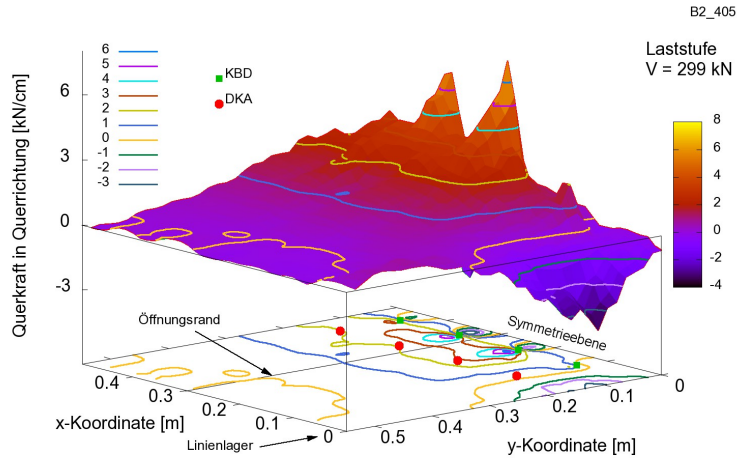
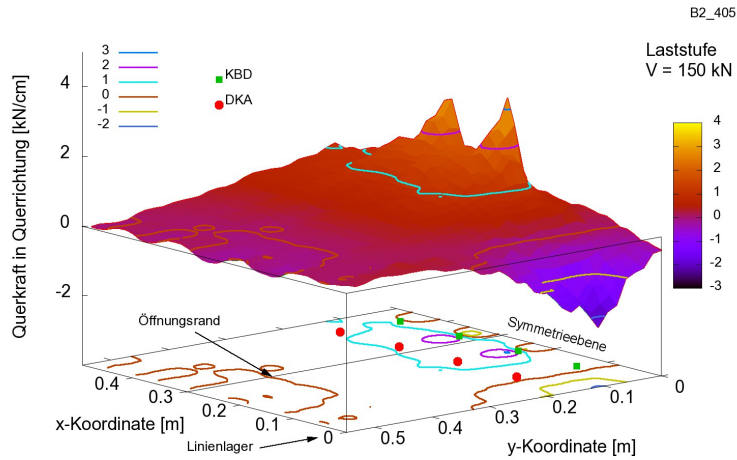
H.13. B2_0_D1



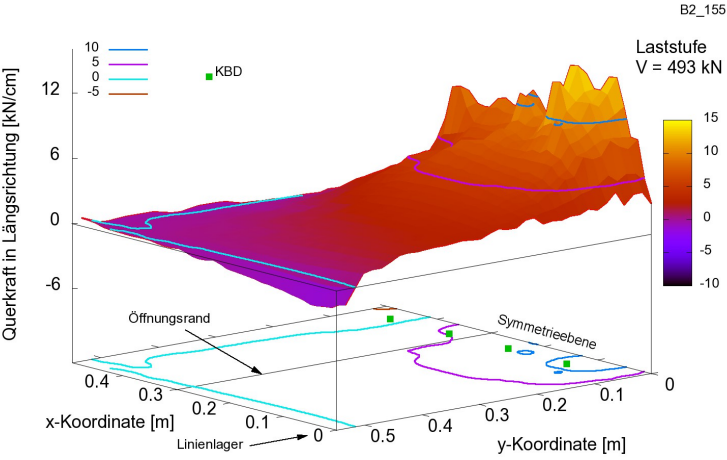
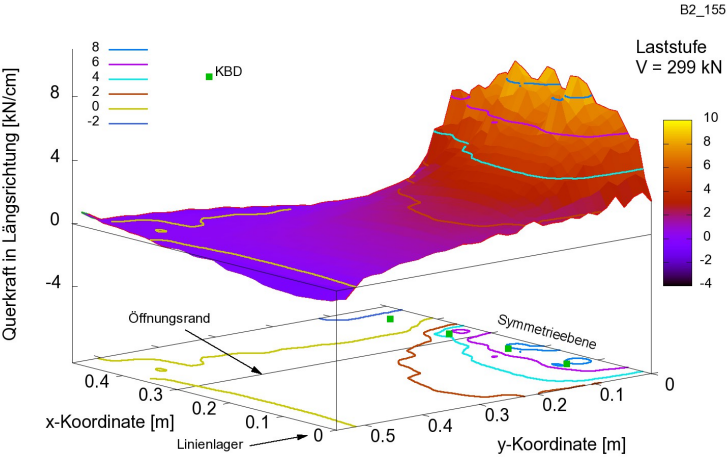
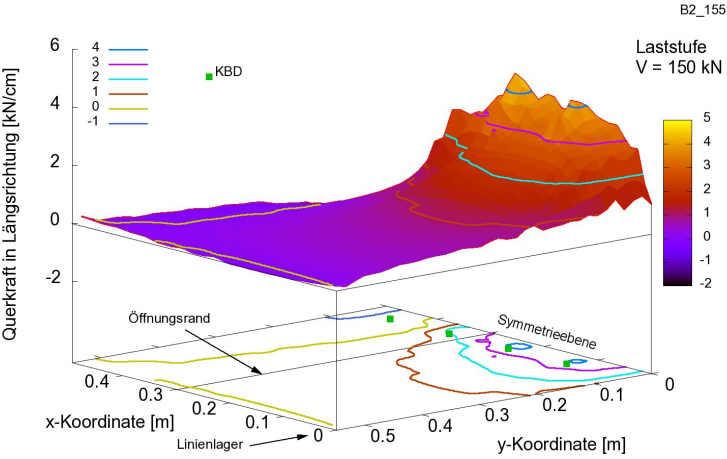


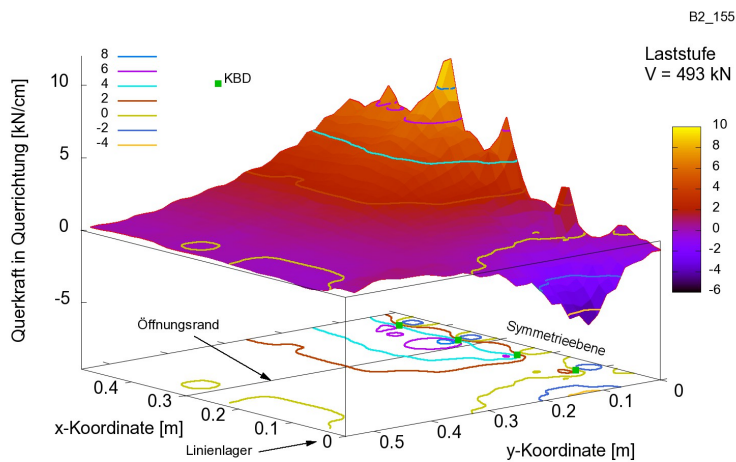
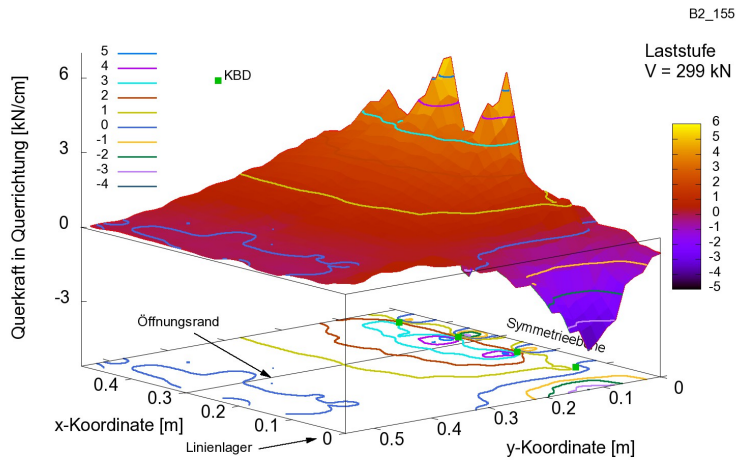
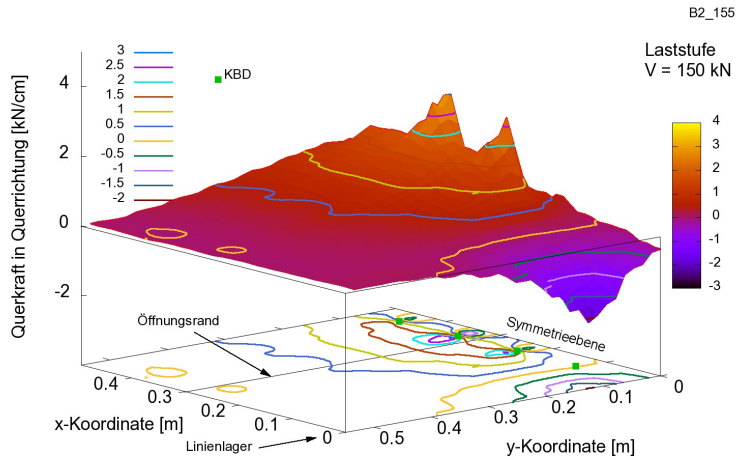
H.14. B2_N_D1



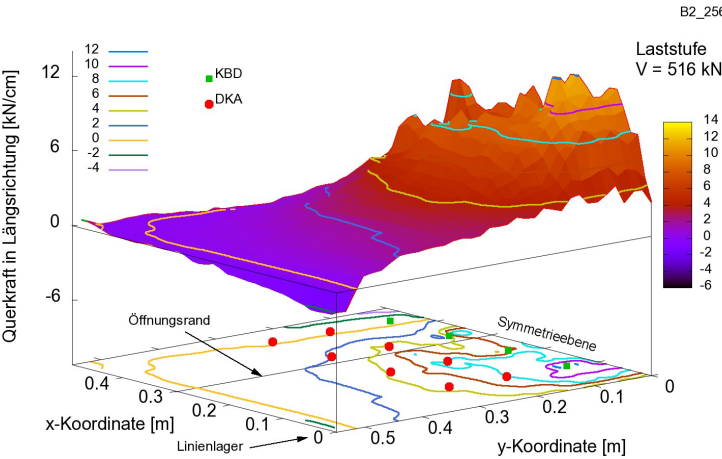
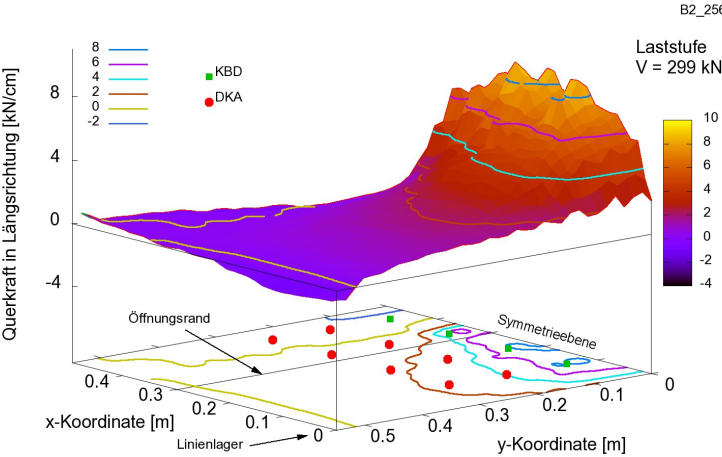
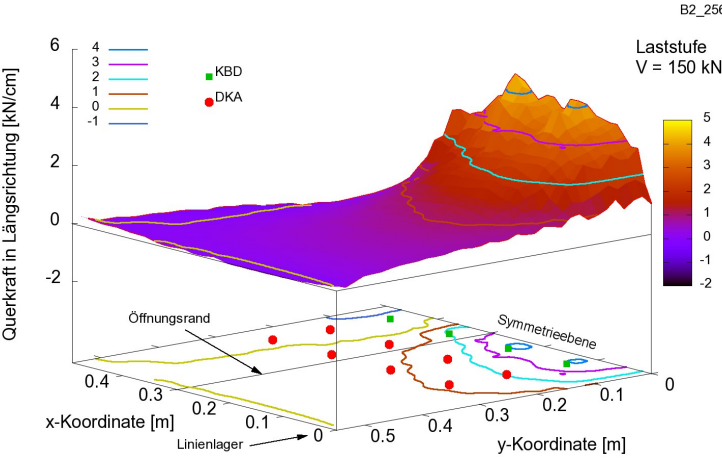


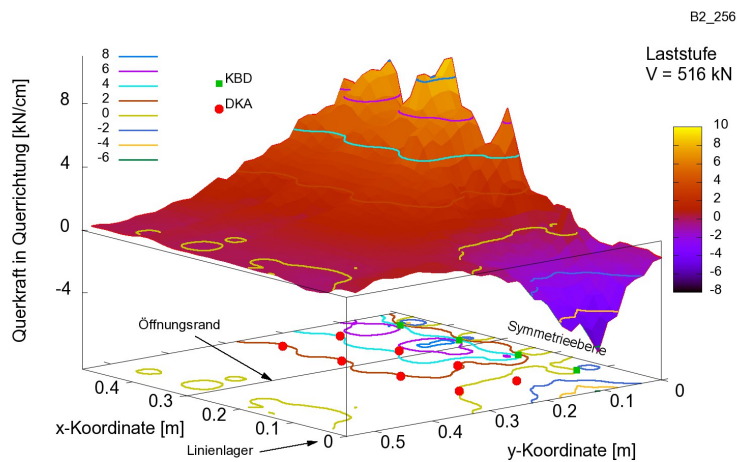
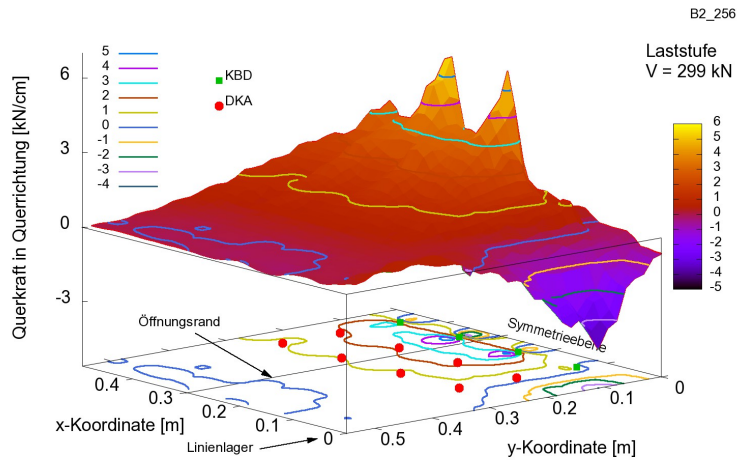
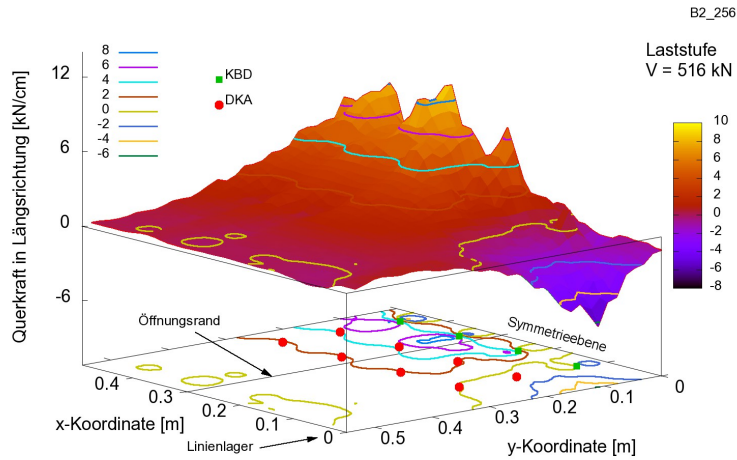
H.15. B2_P_D0



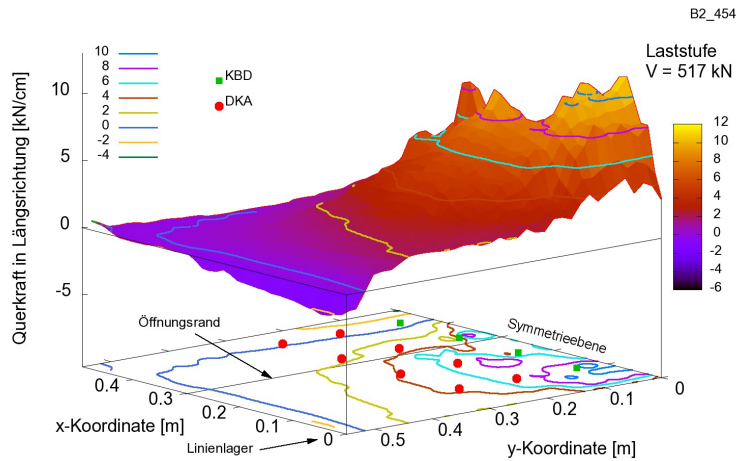
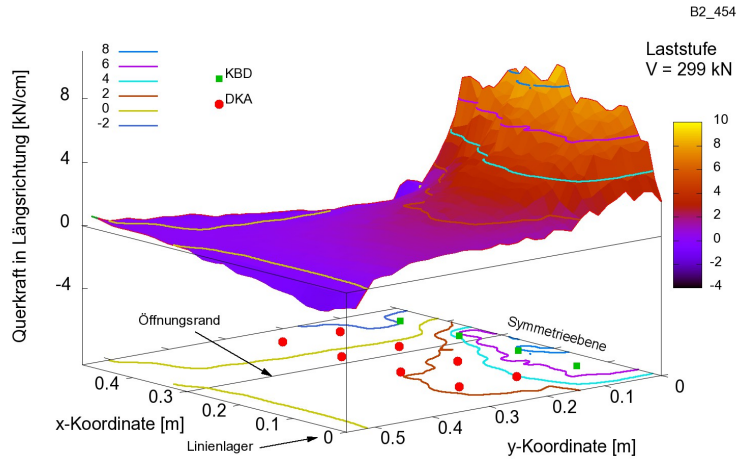
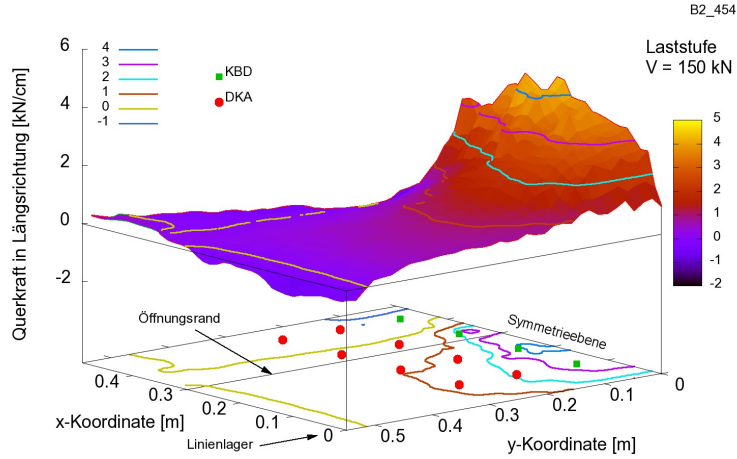


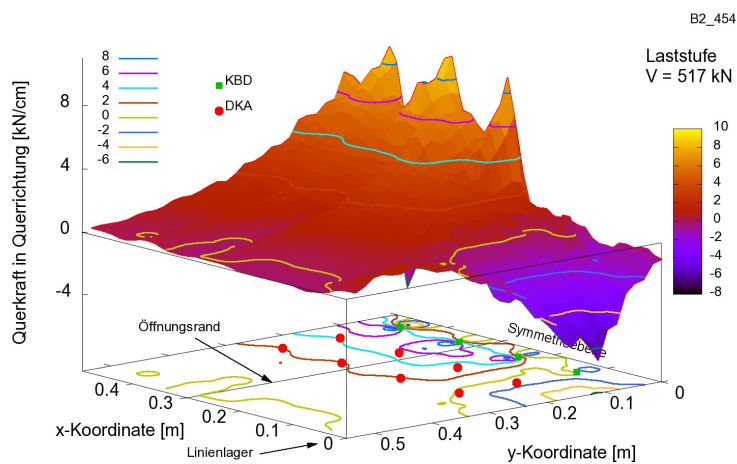
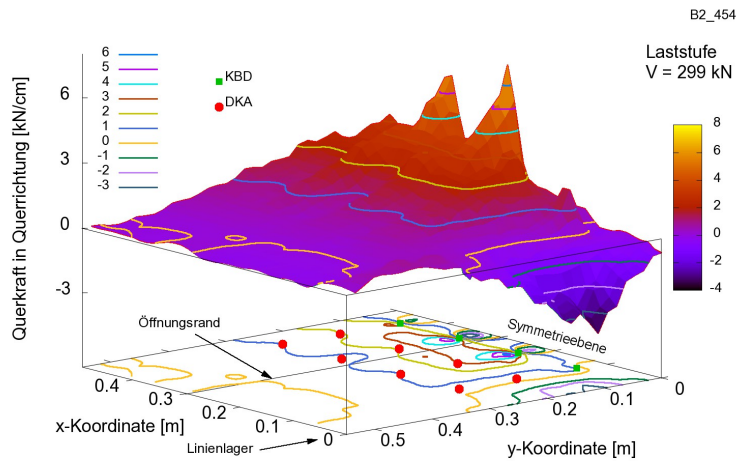
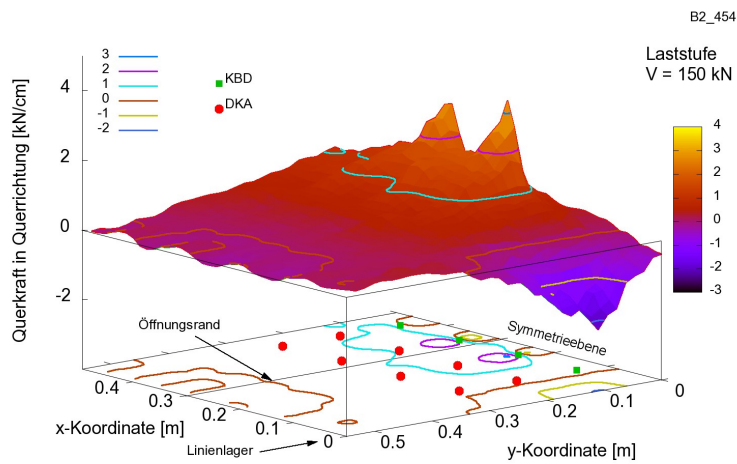
H.16. B2_P_D2



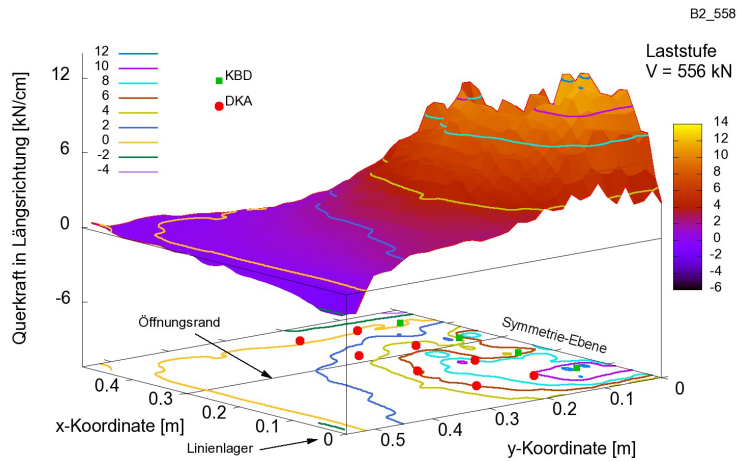
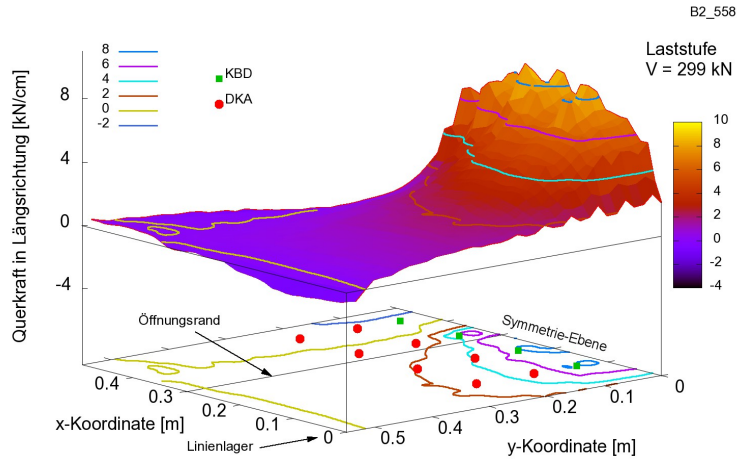
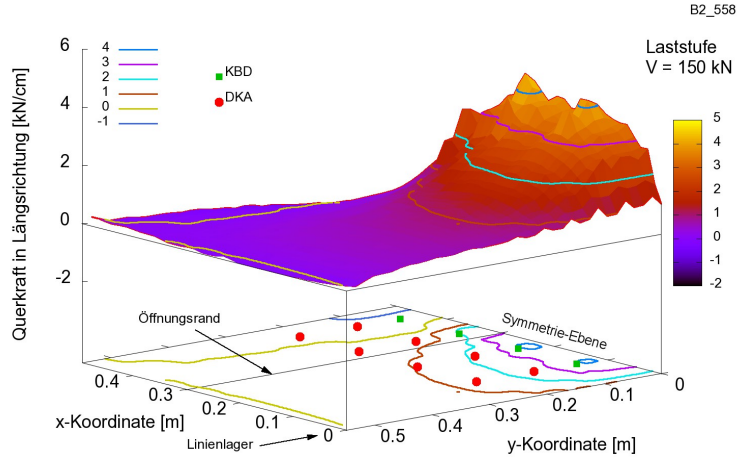


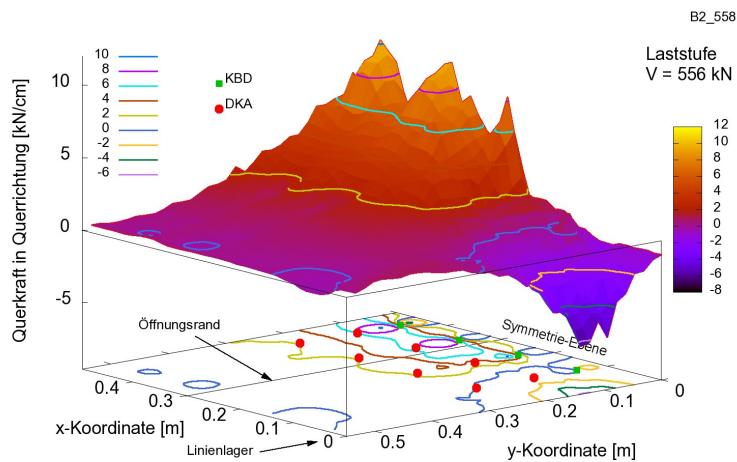
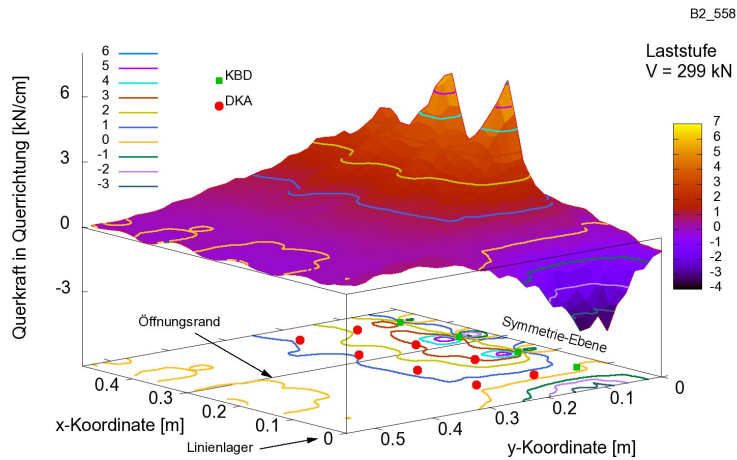
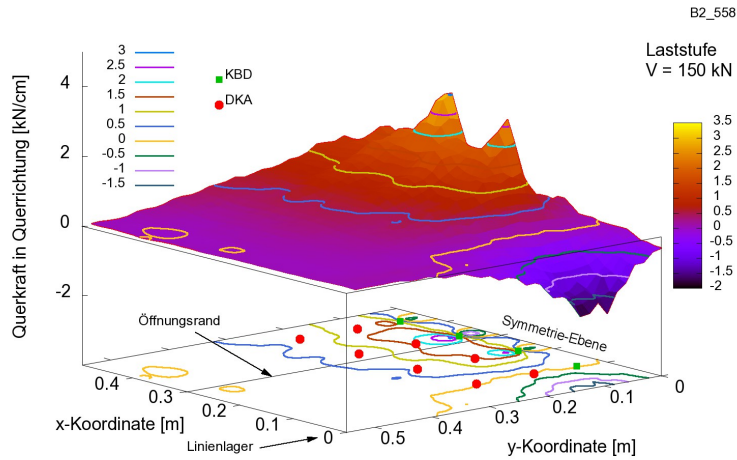
H.17. B2_N_D2



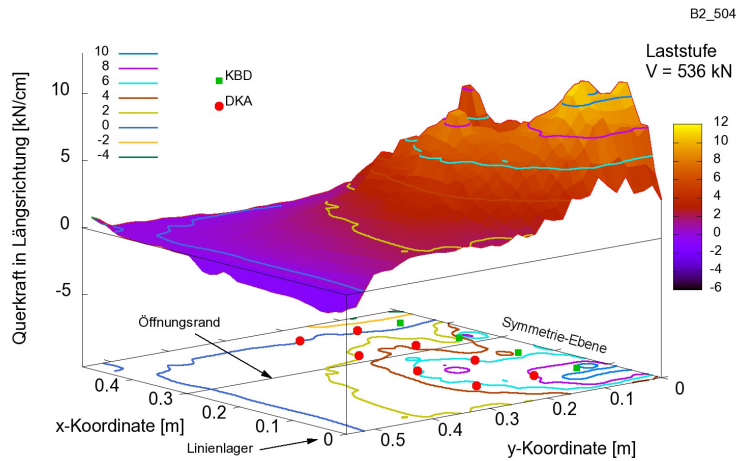
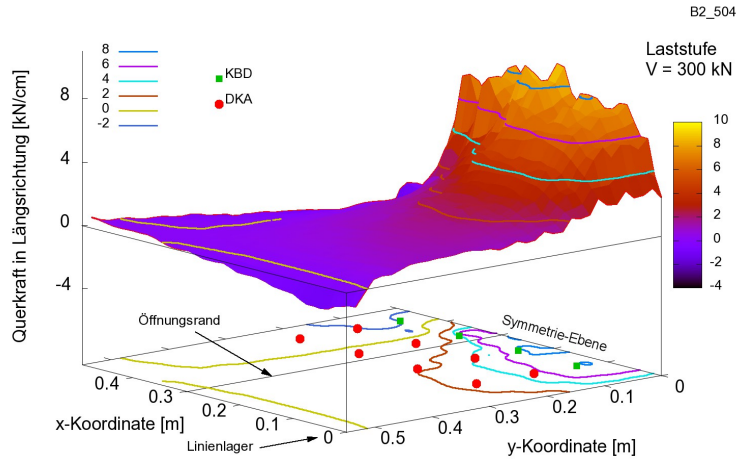
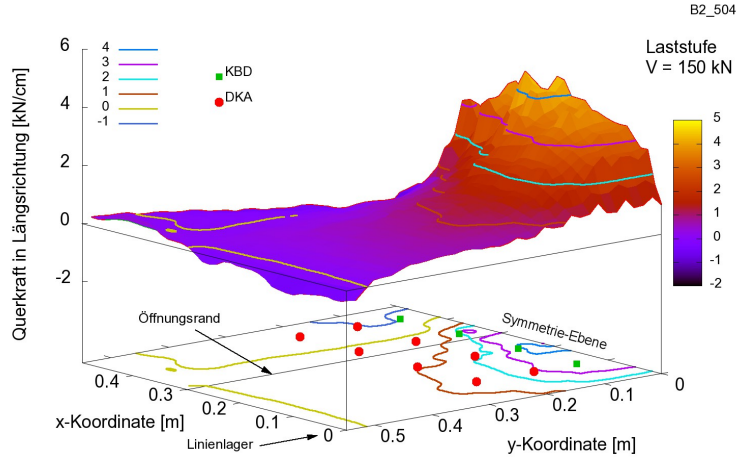


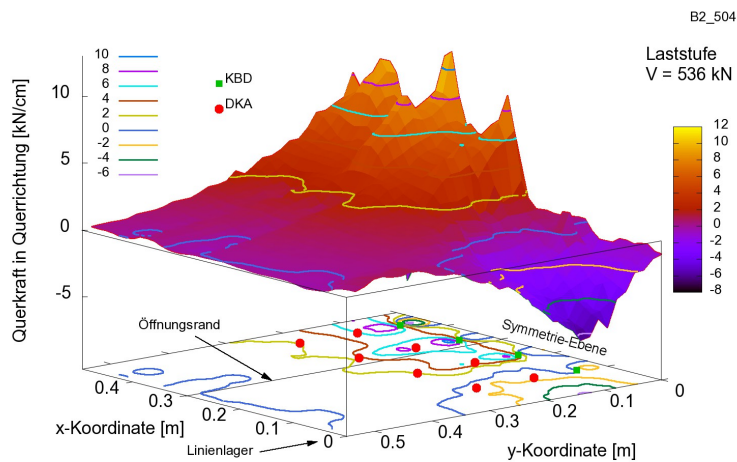
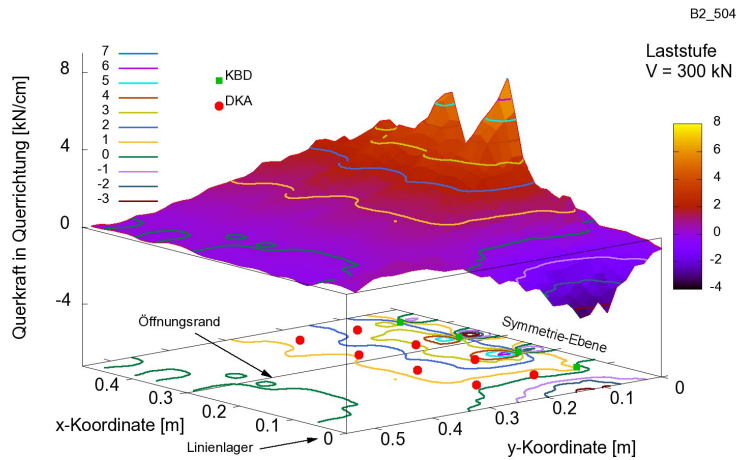
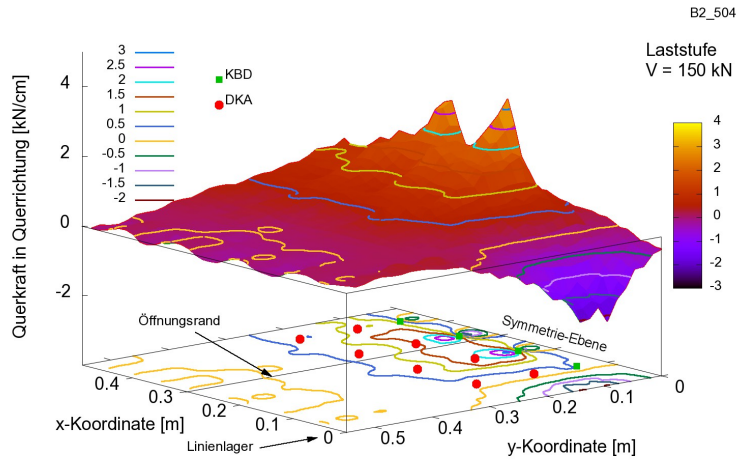
H.18. B2_P_D2_kA



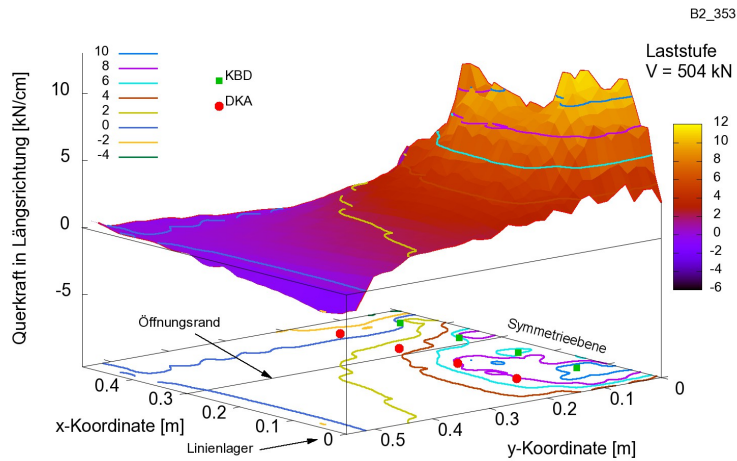
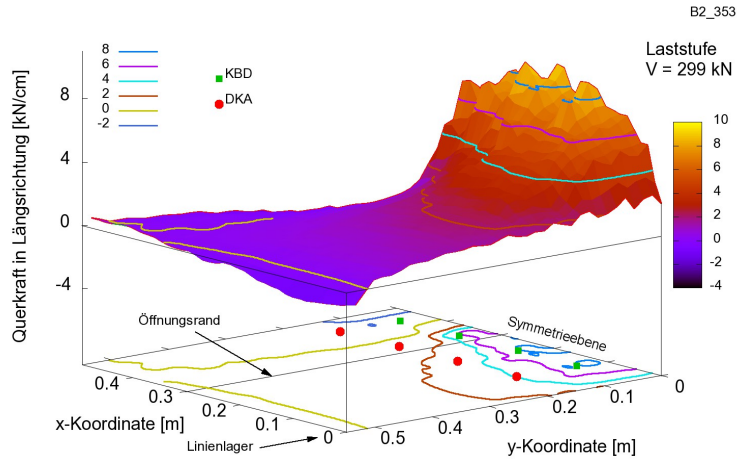
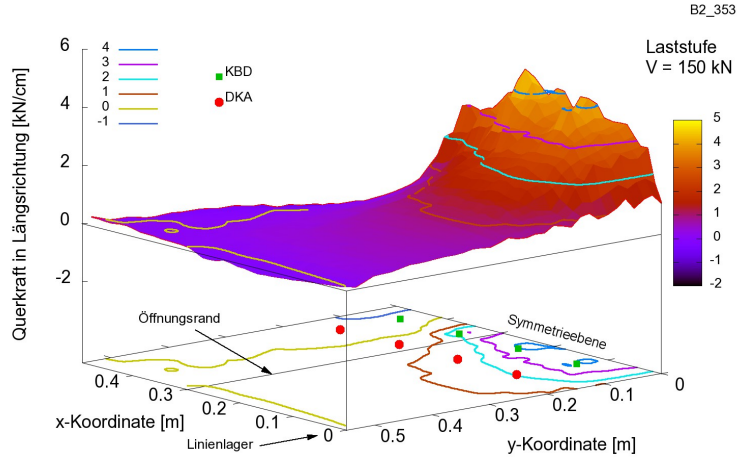


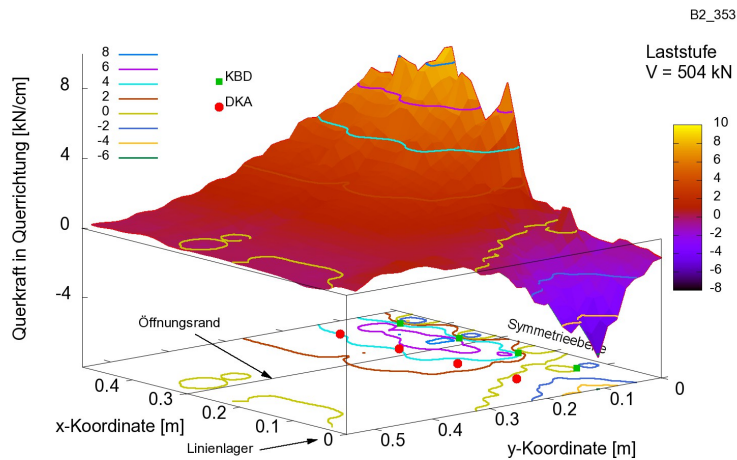
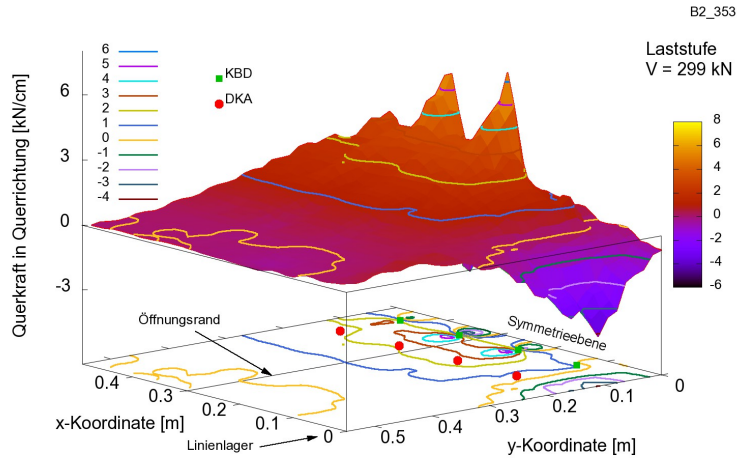
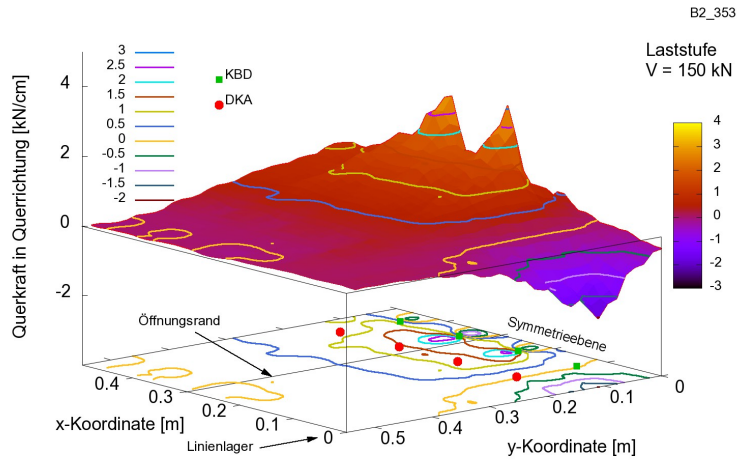
H.19. B2_N_D2_kA



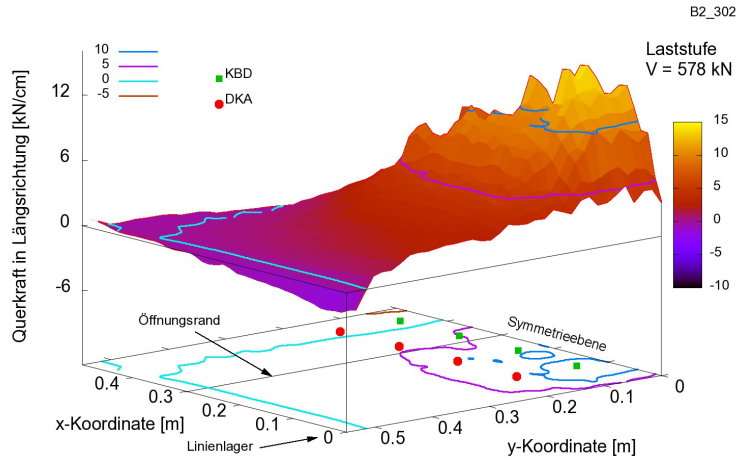
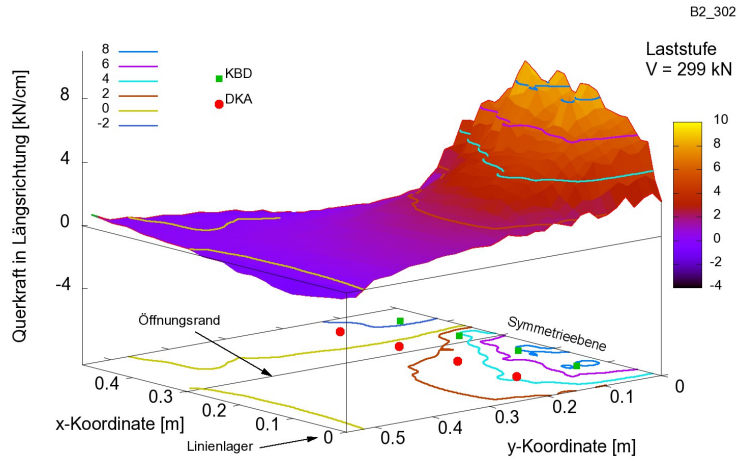
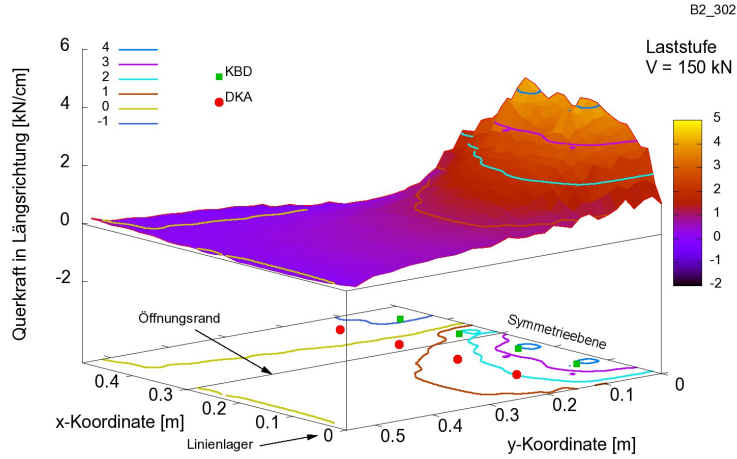


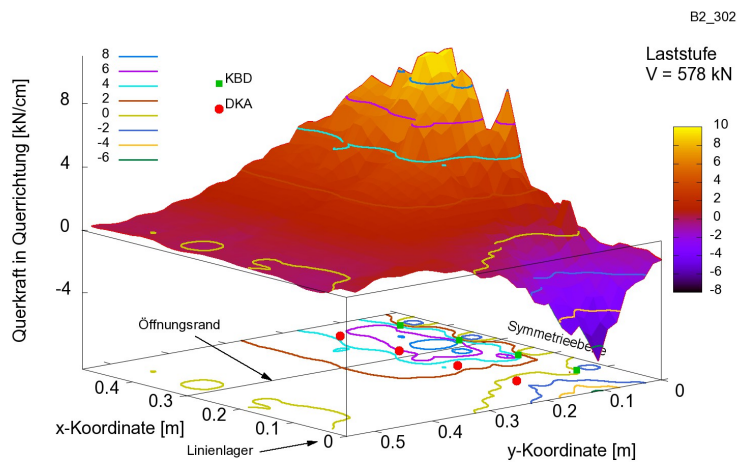
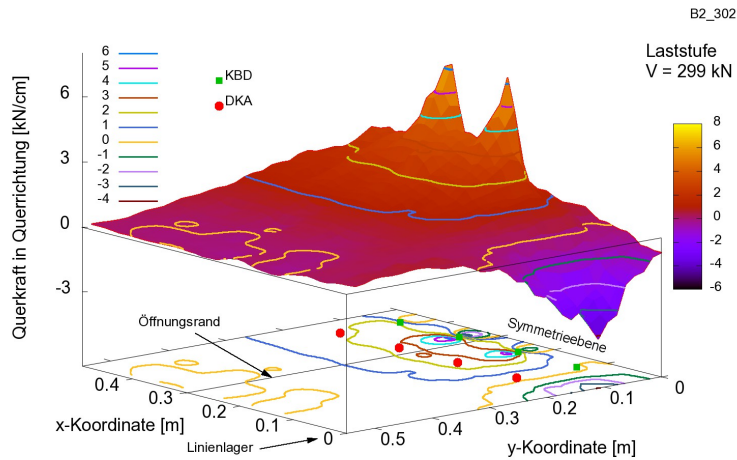
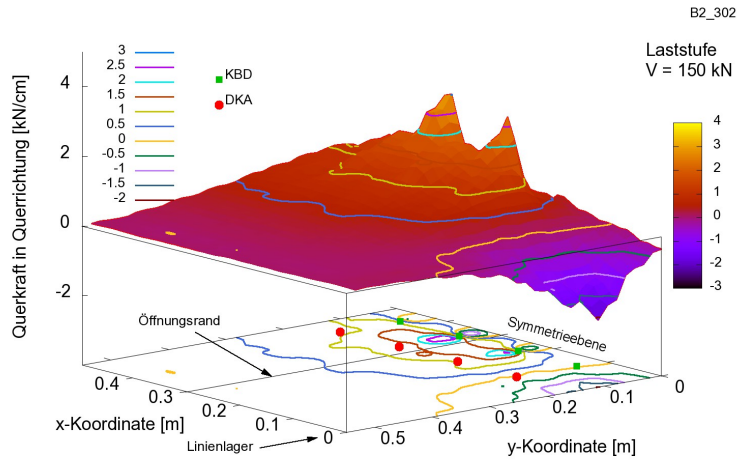
H.20. B2_P_D1_MV



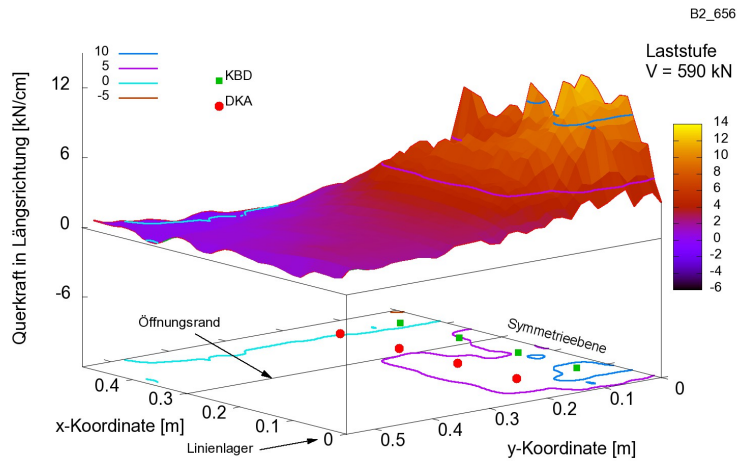
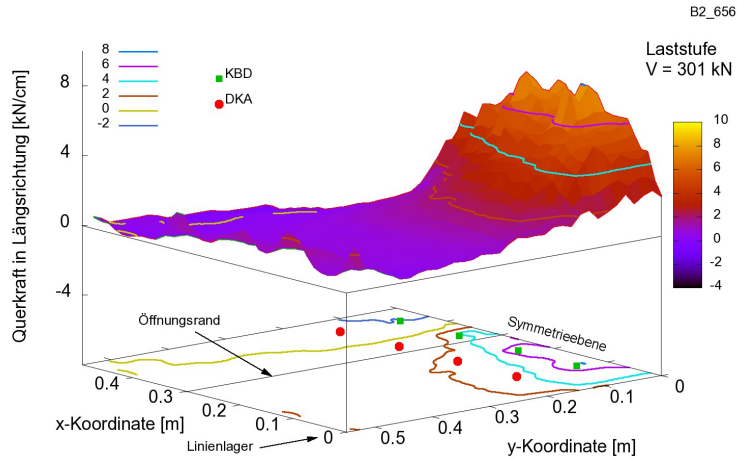
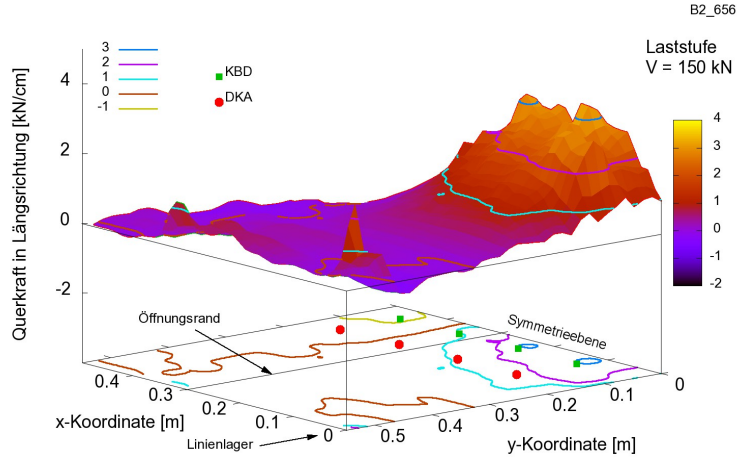


H.21. B2_P_D1_St





H.22. B2_P_D1_Qb



H. Verteilung der Querkraft im Betongurt

